

Volume III
TRANSCRIPT OF RECORD

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1963

No. 367

UNITED STATES, APPELLANT,

VS.

CONTINENTAL CAN COMPANY, ET AL

**APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE
SOUTHERN DISTRICT OF NEW YORK**

**FILED AUGUST 12, 1963
JURISDICTION NOTED OCTOBER 28, 1963**

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SOUTHERN DISTRICT OF NEW YORK

Volume III

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675—Proof of advertisement of Continental Can Company to appear in 1955-56 Directory of Breweries	1281	2817
684—Release #1113, dated August 31, 1955 to Sales List A-2, entitled "Publicity that makes Continental stand out", enclosing various newspaper clippings (excerpt)	1282	2818

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[fol. 306-307]

GOVERNMENT'S EXHIBIT 76

Research Department—Kenyon & Eckhardt, Inc.

Copy #46

The GCMI-Giant Study

A Study of the Optimum Utilization of Glass Jars and Cans
in the Fruit and Vegetable Sections of a Modern Super-
market

Prepared for
Glass Container Manufacturers Institute
With the cooperation of
Giant Food Shopping Center, Inc.,
Washington, D. C.

by Kenyon & Eckhardt, Inc.

March 1958

Copyright, 1958

[fol. 308]

Why The Study Was Done

[fol. 309] There is a great deal of competition for shelf space in the supermarket. New products are perpetually introduced and existing products turn up in an increasing number of diverse sizes and packages. This variety poses a serious problem for the grocer.

On the one hand, he is besieged by salesmen and pressured by consumers. On the other hand, he has only a limited amount of shelf space at his disposal.

Accordingly, he must constantly cut and trim, adjust and improvise, eliminate slow-moving products as he takes on others which he hopes will move in volume.

These decisions are difficult ones to make, particularly since the pressure of each day's problems makes it almost impossible for him to proceed according to any systematic plan.

[fol. 310] The present study was undertaken as a contribution in this area—to provide facts which will be of help to the grocer in deciding how best to utilize glass jars and cans in planning the arrangement of his shelves.

There are many product areas in which no particular packaging competition exists. Pickles, for example, are almost universally packaged in glass, while soups are packaged in cans. Many other products, however, are available to the consumer in both types of packaging. And most important in this area are the packaged fruits and vegetables, which not only account for a good share of total grocery volume, but also fill a substantial portion of the grocer's shelves.

Accordingly, we have singled out the fruit and vegetable sections of the modern supermarket for study. With respect to these sections, we have tackled the following problems

Assuming that the grocer wants to maximize sales, which of several alternatives should he adopt? Should he concentrate on glass jars, or should he concentrate on cans? Or, should he carry some combination of glass jars and cans? Should he carry some products in cans only and other products in jars only, or should he carry the same products both in cans and in jars? What proportion of glass jars to cans should he carry on his shelves? And how, finally, should he handle the different types of pack-

aged products? Should he concentrate all glass jars in a separate glass section or should he disperse them throughout his fruit and vegetable sections?

The experiments in this study were designed to answer these questions.

[fol. 312] How The Study Was Done

[fol. 313] The study was conducted in four large modern supermarkets of the Giant Chain in the Washington, D. C. area. The following four stores participated:

Store A #32—40 Arlington Blvd., Falls Church, Va.

Store B #20—8706 Georgia Avenue, Silver Springs, Md.

Store C #31—4804 Indian Head Highway, Maryland

Store D #29—3336 Wisconsin Ave., N. W., Washington, D. C.

With the cooperation of the Giant Chain Management, and of the managers of the four stores, the packaged fruit and vegetable sections of the stores were turned into a laboratory from April 8, 1957 to July 2, 1957. During this time, two series of experiments were conducted in the stores. These experiments consisted of systematically rearranging the shelves of the stores for two-week periods, and of measuring resulting sales.

At the end of each two-week period, a detailed audit was taken of the fruit and vegetable sections of the stores. Furthermore, two full time research supervisors visited each of the four stores (two times a day on Mondays, Tuesdays, and Wednesdays, and three times a day on Thursdays, Fridays, and Saturdays) to make certain that the shelves had not been disturbed except for the normal flow of merchandise from them. The same research supervisors kept daily counts of the movement of products from the shelves. [fols. 314-315] Making use of the bi-weekly audit data, of delivery records, and of the detailed daily reports of the supervisors, it was possible to compute the volume of movement of each of the products involved in the experiment for each of the four stores, for each of the two-week periods.

Thus, we are now in a position to assess the effects on sales of the various experimental shelf display patterns which were instituted in the course of the study.

1960

[fol. 316]

GOVERNMENT'S EXHIBIT 77

Glass Container Manufacturers Institute
Market Research & Promotion Division

Industry Bulletin #66

November 3, 1958

GCM-~~G~~iant Study

Attached is your copy of the GCM-~~G~~iant Stores Study consisting of three parts as follows:

1. A 24-page booklet reporting pertinent results of this extensive GCM-~~G~~iant merchandising study.
2. Seven single sheets—blue—presenting detailed reports on individual products covered in the Study.
3. A "how-to-use"—background bulletin.

Reference to the booklet will show you that this is a very carefully conducted, well-authenticated study of the dramatic merchandising power of glass packaging for retail food store items.

It is our hope that this booklet with its enclosed work sheets will serve as a productive sales tool for the sales departments of GCM-~~G~~iant glass container and closure member companies, serving to demonstrate to packers the sales possibilities of glass packs, and thereby opening up new or enlarged accounts.

Quantity copies of this booklet are available upon request. Each copy will be sent with the seven work sheets enclosed inside the front cover and instruction sheets attached.

R. L. Cheney, Executive Director and Marketing
Manager.

[fol. 317] How to Use the GCM-~~G~~iant Study

This is a research study on how glass sells. It is for your use with fruit and vegetable packers who ought to put part of their pack into glass containers—or expand glass packs which they already have.

You may also find it useful for other products—such as

juices, health and beauty aids, spices, household cleaning aids, beer, etc.

When you call on a packer:

1. Use the booklet to give him findings for *all* products; to show the over-all merchandising power of the glass container.
2. Then use the Individual Product Data Sheet which fits his *specific* sales problem.
3. Leave a copy of the booklet—and of the Individual Product Data Sheet—with him. (Additional copies are available to GCMI members on request.)
4. Use the material with discretion. Before making your call, examine it carefully to see how it can best fit into your sales story.

Background

The GCMI-Giant Study gears into *three basic* areas, of food merchandising:

The way women shop in today's supermarkets.

The retailer's need for maximum sales in *presently* available shelf space.

The packer's desire to increase *over-all* sales

How Women Shop In Food Stores

Research shows us that—

—Written shopping lists are disappearing.

—Customers depend increasingly upon the *store itself*. In the words of Progressive Grocer's Super Valu Study: "She looks for reminders within the giant shopping list that is the supermarket." DuPont studies show that instore decisions have gone up 20% in the last 10 years.

[fol. 318] —Yet in today's big food marts (again, by Super Valu) to *really* shop the store she must see 260 items every minute.

—And the mental labor involved in making the many in-store decisions required, causes her to shop in a semi-dazed condition.

Therefore, anything which causes her to shop *more* slowly: which attracts her attention and brings her *out* of the daze caused by shopping.

Produces Greater Store Sales Over-all—and Particularly for Items She Will See and Buy on Impulse:

The GCMI-Giant Study gives retailers and packers an important new profit idea, comparable in selling power to “related item displays,” “loss leaders,” etc.

Glass Containers In Engineered Merchandising.

It proves, by careful research, that glass containers are a *merchandising tool* for both packer and retailer—

- They work like actual Point of Sale material, like bright spots of color in a black and white ad; acting as “stoppers” for customers wandering listlessly past supermarket shelves.
- So for the retailer, they not only sell *themselves*—but they produce sales for items in other containers as well. They produce greater store sales over-all, with present shelf space.
- For the packer they create *extra sales*. This is *plus* business—not just a swap of sales in glass for sales in tin.

1963

[fol. 319]

GOVERNMENT'S EXHIBIT 79

**Survey of Consumer Preference for Food Containers
For
Glass Container Manufacturers Institute, Inc.**

**Ford Sammis & Company
Marketing Economists**

1964

{fol. 320}

Ford Sammis
Marketing Economist

530 West Sixth Street, Los Angeles 14
Trinity 9549

January 25, 1955

Glass Container Manufacturers Institute, Inc.
99 Park Avenue
New York 16, N.Y.

Attention: Mr. Richard L. Cheney, Director Market Research and Promotion Division

Gentlemen:

Transmitted herewith is report on "Survey of Consumer Preference For Food Containers," conducted at your request for the information of your Institute and its member companies.

Purpose of this survey was to study fields where glass containers have not been traditionally used, to investigate.

- (a) Extent and strength of consumer preference for glass or other types of containers in each field,
- (b) Consumer motivations affecting container preference—why certain containers are preferred, why other types are not liked,
- (c) Characteristics of the market for each type of product.

Emphasis has been placed on consumer preference because, in the final analysis, that is what determines the type of container which will ultimately be used for any given field.

Respectfully, Ford Sammis

1965

[fol. 321] Survey of Consumer Preference for
Food Containers

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Ripe Olives	25
Chocolate Sauce & Ice Cream Toppings	27
Acid Products	30
Impulse Items	34

1966

[fol. 322]

Description of Survey

The survey consists of personal interviews with 8,021 housewives, conducted in 94 cities, towns, and rural areas in 42 states. The sample represents a complete and representative cross-section of all U. S. families, balanced in proportion to population by geographic regions, size of city, socio-economic level, race and other market characteristics. Rural areas and farms have been included in proper proportion. Field work was done during August, 1954.

Statistical accuracy is insured by the large sample, which permits detailed analysis of the findings. The census regions illustrated on the map below have been used for regional breakdowns.

In considering the data, it should be realized that all reason questions were "open-ended." The answers recorded were those given voluntarily by respondents on their own initiative, without any reasons being suggested to them. This survey, therefore, reflects those factors that are at the top of consumers' consciousness.

[fol. 323]

Summary

Major findings of this survey of food products which have not been traditionally packed in glass are as follows:

1. Glass has secured dominant consumer preference positions in baby food and instant coffee, where it has been in general use for several years, although it lags behind cans in the regular coffee field. Consumer preference is

- 7.4 to 1 for glass for baby food
- 5 to 1 for glass for instant coffee
- 2.4 to 1 for cans for regular coffee

2. Strong latent demand exists in several new fields where glass containers are not now generally used, including

- Intermittent use products (not used up in one serving)
- Products with high acid content
- Impulse items

3. Glass is preferred for many intermittent use products, such as condiments, cooking ingredients, spreads, spices, prepared sauces, rice, salt, etc. Consumer preference on four selected intermittent use products are

- 4 to 1 for glass for salad & cooking oil
- 4 to 1 for glass for dry milk
- 2.6 to 1 for glass for ripe olives
- 1.1 to 1 for glass for chocolate sauce & other ice cream toppings

- [fol. 324] 4. Glass is preferred for acid products, like tomato juice, tomato sauce, tomato paste, sauerkraut, lemon juice, fruit juices, Consumer preference is

1.5 to 1 for glass for tomato juice

5. Glass containers stimulate sales of impulse items, where decision to buy is made after consumer sees product in stores. Consumers like eye appeal and visibility of product in glass containers for impulse items such as

- Specialty products, not regularly purchased
- Products with high color or eye appeal
- Products where quality varies among brands
- Products that are unique in appearance

6. Basic qualities of glass motivate consumer preference. For products studied in this survey, chief reasons consumers like glass containers are

- Safe for storing foods in container after opening
- Visibility of contents
- Ability to reseal tightly
- Ease of handling and opening
- No effect on flavor
- Eye appeal, attractiveness

1968

[fol. 325]

GOVERNMENT'S EXHIBIT 80

Glass Container National Survey

1954

Summary

Ford Sammis
Marketing Economist

1969

[fol. 326]

Ford Sammis
Marketing Economist

530 West Sixth Street, Los Angeles 14,
Trinity 9549

October 25, 1954.

Glass Container Manufacturers Institute, Inc.
99 Park Avenue
New York 16, New York

Attention: Mr. R. L. Cheney, Manager Market Research
& Promotional Division

Gentlemen:

Transmitted herewith is our summary of the Glass Container National Survey—1954.

This survey has been conducted at your request for the confidential information of your Institute and its members. This report is not to be reproduced in whole or in part without our permission.

Respectfully, Ford Sammis.

1970

[fol. 327]

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Trade Problems

1972

[fol. 328] Purpose

To study preferences, prejudices and habits affecting use of glass containers, comprehensive national surveys were conducted during August, 1954, among consumers, retailers, wholesalers and chain store organizations.

Omnibus Coverage

Utilizing a broad approach, 28 different product classifications have been investigated, involving over 3¼ million individual answers to questions asked in more than 12,000 personal interviews conducted by trained investigators. Actually, this project represents 5 or 6 separate surveys, all conducted concurrently.

Complete Cross-Section of Population

Because container choice rests ultimately with consumers, major emphasis has been placed on study of consumer habits, preferences and prejudices.



The consumer survey consists of personal interviews in homes with 8,000 housewives, 1,000 men and 1,000 children. All three samples have been balanced geographically, by city size, by socio-economic level, by age, and other market characteristics. Rural areas and farms were included in proper proportion.

The survey thus represents a complete and representative cross-section of the entire U. S. population.

[fol. 329] The retailer survey consists of nation-wide samples of 1,200 grocery stores and 600 drug stores (balanced in proportion to size of store) and spot samples of 100 liquor stores and 100 hardware stores. In addition, depth interviews have been conducted with officials of representative wholesale and chain organizations in various parts of the country.

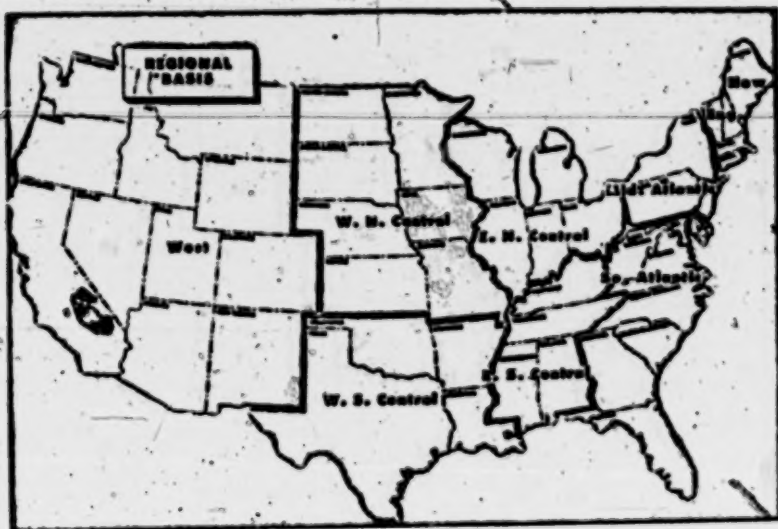
Nation-Wide Scope

Interviews were conducted in 94 interviewing points in 42 states, as shown by the red circles on the map. This provides geographic dispersion and insures that the survey reflects local variations in habits and preferences.



[fol. 330] Regional Basis

The large samples provide statistical accuracy and also permit detailed analysis by geographic regions. The Census regions illustrated on the map have been used in this study as the most useful common denominator.



The vast fund of facts accumulated in this survey will be presented in separate reports on beer, soft drinks, baby food, milk and other product classifications. This is a general summary of the major findings—a quick bird's-eye view of the whole picture.

In order to facilitate the most practical application of the survey data, this report is divided into 3 sections:

- First—How does glass stand in consumer preference?
- Second—What markets are most critical?
- Third—How can present positions be improved?

1975

[fol. 331]

GOVERNMENT'S EXHIBIT 81

National Consumer Surveys on Glass Containers
1955

Conducted By
Ford Sammis & Company
Marketing Economists

1976

[fol. 332]

Ford Sammis & Company
Marketing Economists

750 Colorado Boulevard, Los Angeles 41

April 20, 1956.

Glass Container Manufacturers Institute
99 Park Avenue
New York 16, N. Y.

Attention: Mr. Richard L. Cheney, Manager
Market Research and Promotion Division

Gentlemen:

Transmitted herewith is a summary report on the National Consumer Surveys on Glass Containers conducted in October, 1955. This is the second annual survey in G.C.M.I.'s continuing market research program, and consists of two parts:

- (a) National survey of 4,000 housewives, representing a complete cross-section of all families in the United States.
- (b) Test market surveys totaling 4,600 interviews, representing cross-sections of the total population (men, women and children over 10) in Akron, Dallas, Milwaukee, Los Angeles and Washington, D. C., where special campaigns were conducted on soft drinks and milk.

Objectives of G.C.M.I.'s continuing market research program are:

1. To measure market trends on basic factors affecting sales of glass containers.
2. To intensively study specific problems of current importance. In the 1955 survey, the principal specific problem surveyed was effectiveness of the G.C.M.I. advertising campaign.

1977

3. To develop new facts on consumer and trade preferences, prejudices and habits affecting glass and competing containers, thus continually adding to our storehouse of knowledge.

Charts in the attached report are grouped under these three headings.

Respectfully, Ford Sammis.

1978

[fol. 333]

National Consumer Surveys On Glass Containers—1955

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1980

[fol 334]

GOVERNMENT'S EXHIBIT 82

National Market Survey on Glass Containers

1956

Summary

Conducted By

**Ford Sammis & Company
Marketing Economists**

for

Glass Container Manufacturers Institute, Inc.

1981

[fol. 335]

Ford Sammis & Company
Marketing Economists

750 Colorado Boulevard
Los Angeles 41, California
CLinton 5-7101

500 Fifth Avenue
New York 36, New York
CHickering 4-4363

December 27, 1956.

Glass Container Manufacturers Institute, Inc.
99 Park Avenue
New York 16, N. Y.

Attention: Mr. Richard L. Cheney, Director Market
Research and Promotion

Subject: National Market Survey on Glass Containers, 1956

Gentlemen:

This report is a summary of the national market survey conducted in August, 1956. Charts are those shown at the Semi-Annual Meeting at Phoenix, Arizona on November 13.

The survey consists of personal interviews with nationwide cross-sections of

5103 housewives
2554 men
1254 retail grocery store managers.

Data on baby food from the 1956 national survey have been presented in a separate report.

Respectfully, Ford Sammis:

1982

[fol. 336]

National Market Survey
On Glass Containers—1956

Summary & Table of Contents

For details, see page

Beer

Glass preference is increasing, and can sales have now reached their consumer preference level, indicating a slow-down in future growth 1

Soft Drinks

Glass preference is increasing. Can sampling is slowing up and can sales are not growing, due to lack of consumer preference and poor distribution 4

Milk

Glass preference has decreased slightly for home-delivered milk in medium size cities and for store-bought milk in small towns and rural areas. Store buying is on an increasing trend 14

Dry Milk

Paper boxes have outstripped glass in consumer preference, because brand leaders are packed in paper 17

Liquid Detergent

Can preference is increasing steadily, now outweighs glass 3½ to 1, due to use of cans by all leading brands. Consumer acceptance of liquid type for heavy duty detergent is low 20

General

Preference is shifting for tomato juice, holding steady for instant coffee. Many opportunities exist for glass-packed fruits and vegetables 24

1983

**DYNAMICS OF THE
CONTAINER MARKET**

Summary of Talk Delivered to
Glass Container Manufacturers Institute
at the Annual Meeting, May 22, 1956,
White Sulphur Springs, West Virginia

FORD SAMMIS & COMPANY
MARKETING ECONOMISTS

[fol. 338]

1984 FORD SAMMIS & COMPANY

730 COLORADO BOULEVARD
LOS ANGELES 41, CALIFORNIA
Glendale 5-7101



FORD SAMMIS & COMPANY
INCORPORATED
NEW YORK 36, NEW YORK

300 FIFTH AVENUE
NEW YORK 36, NEW YORK
Glendale 5-7101

Glass Container Manufacturers Institute, Inc.
99 Park Avenue
New York 16, N. Y.

Attention: Mr. Richard L. Cheney, Director
Market Research and
Promotion Division

Gentlemen:

Transmitted herewith is summary of a talk given before your members at
the Annual Meeting, May 22, 1956.

Since the charts used in this talk speak for themselves in most instances,
comments are included only where necessary to convey data not shown by
chart.

Respectfully,

CONTAINER DYNAMICS**C O N T E N T S**

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1986

[Vol. 340]

**DYNAMICS OF THE
CONTAINER MARKET**

CONTAINER DYNAMICS

Every consumer product tends to standardize on a single type of container. Glass has become the standard, traditional container for a host of products, including catsup, salad dressings, salad oil, instant coffee, prune juice, mayonnaise, peanut butter, jams and syrup. Other products have standardized on tin cans - regular coffee, evaporated milk, dog food, and most fruits, vegetables and juices.

However, no traditional market is ever secure for any type of container. Marketers are apt to try out new containers at any time, in their constant search for ways to increase sales.

When this happens, the result is a period of container competition, which may run through one or more of three separate stages.

Container Competition - Stage 1

Consumers usually have an inherent preference for a particular type of container for any given product. They also have definite brand preferences. When brand preference and container preference come into conflict, brand preference usually proves to be the stronger. But not always, and not for all persons.

A new container can become a potent sales force for a brand, if strong consumer preference exists (or is promoted) for that type of container. Recognizing this, secondary brands are constantly trying out new types of containers as sales incentive. While leading brands are ordinarily satisfied to maintain the status quo, secondary brands are willing to gamble to improve their positions.

Stage 1 of container competition occurs when a new type of container is first introduced by a secondary brand.



Stage 1 was reached in the instant coffee field during the past year. Folger test-marketed tin cans for their instant coffee in more than a dozen mid-west markets. In spite of special promotions, the new container did not take hold with the public, and has recently been withdrawn from the market. Glass remains the standard instant coffee container, at least for the time being.

Container Competition - Stage 2

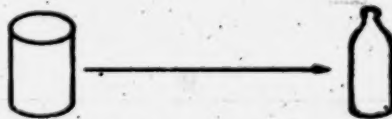
If a secondary brand increases its sales during the period when it is introducing a new type of container, the sales increase is usually attributed to the new container, by marketer and competitors alike. Advertising, product changes or other factors may actually be more important than the new container, but circumstantial evidence points to the container.

Leading brands are not prone to sit idly by while competitors cut into their share of the market. They tend to cover competitors' bets by offering both traditional and new types of containers to their customers. This creates Stage 2 of container competition.

Leading Brand



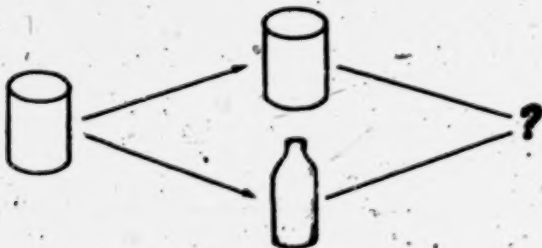
Secondary Brand



Container Competition - Stage 3

When leading brands are available in a choice of containers, consumers container preference is no longer in conflict with their brand preferences. They can have the brand they want in the container they want. Sales of leading brands under these circumstances seek the level of consumer preference for each type of container.

If preference for one type of container greatly exceeds preference for the other type, the products then tends eventually to standardize once again on a single type of container - the container most consumers prefer. This process is subject to promotion of container by brand marketers or container manufacturers. The alternate outcome can be favorable to either the new or the traditional container.



Container competition has recently gone through all three stages in the fields of regular coffee, salad oil, and soft drinks. Cans have won out for coffee, glass for salad oil and soft drinks.

Other fields where glass is currently engaged in container competition with other types of containers are described in the following case studies, presented in chart form.

[fol. 344]

1990

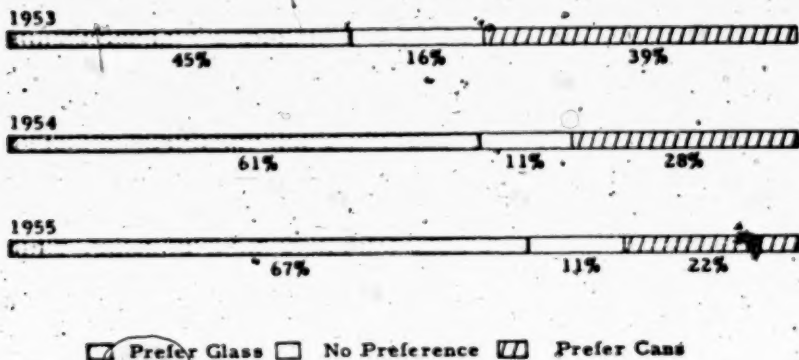
BABY FOOD
(WEST OF MISSISSIPPI)

CONTAINER COMPETITION IN STAGE ONE

1991

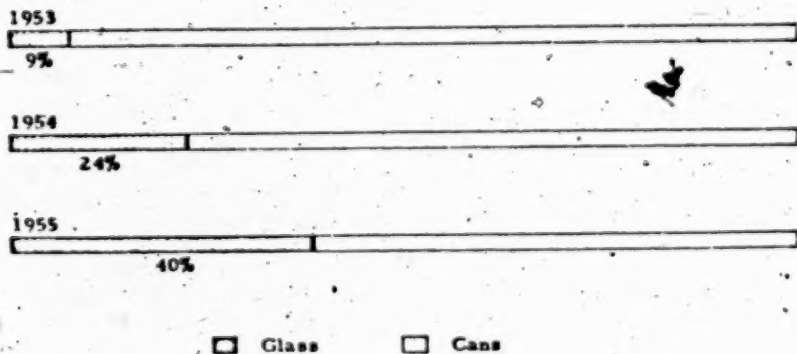
BABY FOOD (WEST OF MISSISSIPPI)

CONSUMER PREFERENCE HAS BEEN IN FAVOR OF GLASS



BABY FOOD (WEST OF MISSISSIPPI)

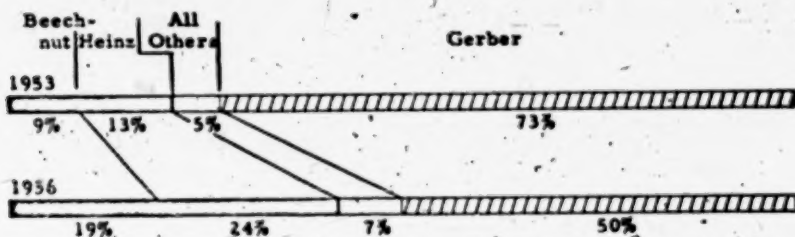
GLASS SALES ARE CATCHING UP WITH CONSUMER PREFERENCE



1992

BABY FOOD (WEST OF MISSISSIPPI)

**BRAND LEADER MAY SOON BE FORCED INTO GLASS TO
OFFSET SALES DECLINE.**



COMMENTS

Container competition in the baby food market is confined to the area West of the Mississippi. In the East, glass has over 90% of the market.

Consumer preference in the West is 3 to 1 in favor of glass, and glass sales are growing rapidly toward the preference level. In 1953, Beechnut was the only brand offered in glass in this area. Heinz was in cans in 1953, and had 13% of the market. Since switching to glass, its share has gone up to 24%, and Beechnut has increased to 19%.

Store audits conducted in a panel of Los Angeles super-markets reveal the following sales trend:

SALES OF BABY FOOD IN LOS ANGELES

SUPER MARKETS

	% in Glass
Oct. - Nov. 1954	34%
Dec. - Jan 1955	36
Feb - Mar	37
April - May	40
June - July	34
Aug - Sept.	39
Oct. - Nov.	38
Dec. - Jan. 1956	43
Feb. - March	43

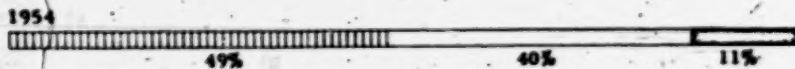
Heinz and Beechnut gains (in glass) have been at the expense of the brand leader, Gerber (in tin). It is reported that Gerber has started to offer both glass and tin in several Western markets. This indicates that baby food container competition is now entering Stage Two.

DRY MILK

CONTAINER COMPETITION IN STAGE TWO

1994**DRY MILK**

GLASS HELD DOMINANT CONSUMER PREFERENCE POSITION BEFORE CARNATION ENTERED FIELD.



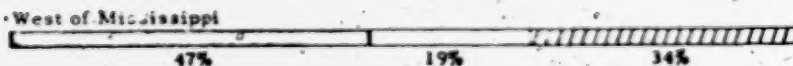
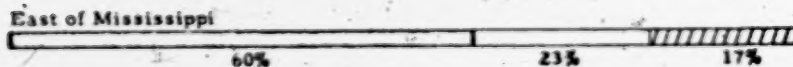
WITH CONTAINER AND BRAND COMPETITION, PREFERENCE HAS SHARPENED. GLASS HAS GAINED, BUT OTHER CONTAINERS HAVE GAINED MORE.



Prefer Glass
 No Preference
 Prefer other Containers

DRY MILK

GLASS IS STRONGEST EAST OF THE MISSISSIPPI



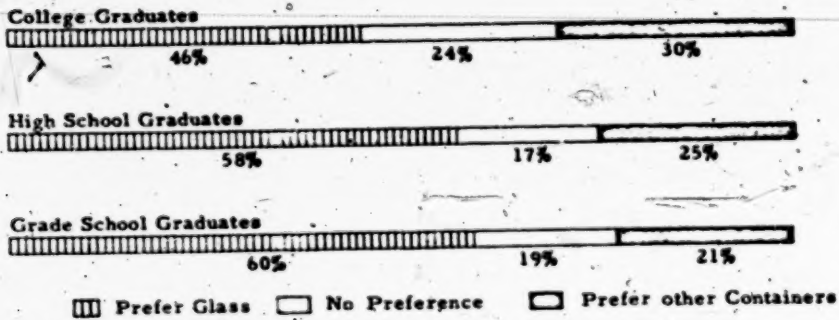
Prefer Glass
 No Preference
 Prefer Other Container

1995

[fol. 349]

DRY MILK

COMPETING CONTAINERS HAVE GREATEST STRENGTH
AMONG OPINION LEADERS

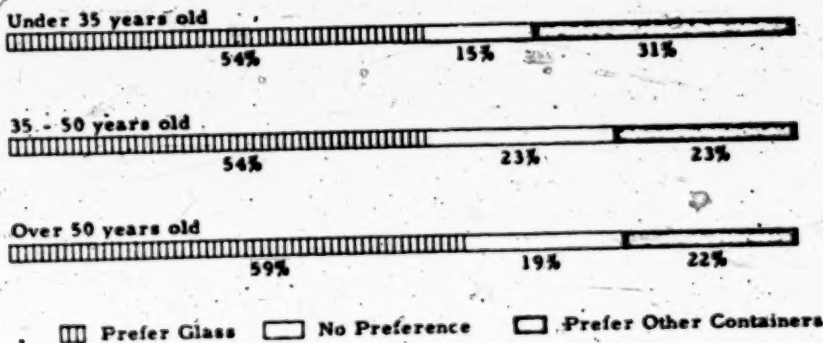


1996

[fol. 350]

DRY MILK

COMPETITION IS STRONGER WITH YOUNGER HOUSEWIVES.



COMMENTS

Before Carnation entered the market in a paper box, there was no active container competition in the dry milk field. Preference among users was heavily in favor of glass, but 40% had no preference on container.

During the past year there has been active container competition between leading brands. Carnation has merchandised its paper box and Pet has featured its glass jar in TV commercials. Result has been to focus consumer attention on container and to sharpen container preference (81% of all users now have a definite container preference). Glass is still the preferred container, but has not gained relatively as much as competing containers.

Dry milk container competition has recently entered Stage Two: Pet is now offering a giant size in paper box, retaining glass jars for regular size package.

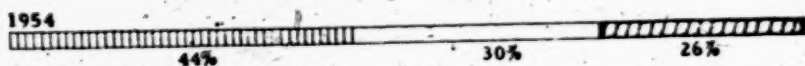
LIQUID DETERGENT

CONTAINER COMPETITION IN STAGE THREE

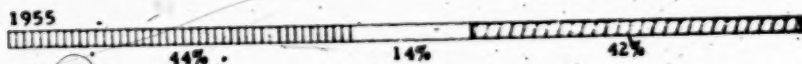
[Vol. 332] **1998**

LIQUID DETERGENT

INTRODUCTION OF LIQUID LUX IN CANS MET A LARGE WAITING CONSUMER PREFERENCE.

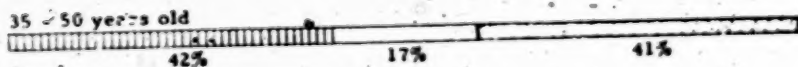
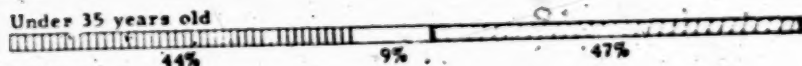


LIQUID LUX FOCUSED ATTENTION ON CONTAINER, CREATED INCREASED PREFERENCE FOR CANS, FORCED P & G TO OFFER CANS IN SELF DEFENSE.



LIQUID DETERGENT

EVENTUAL OUTCOME LOOKS FAVORABLE TO CANS, BECAUSE YOUNGER PEOPLE PREFER CANS



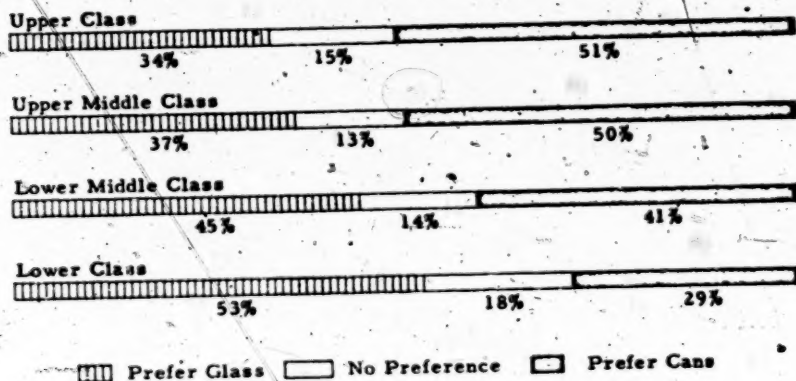
Prefer Glass
 No Preference
 Prefer Cans

1999

[101-255]

LIQUID DETERGENT

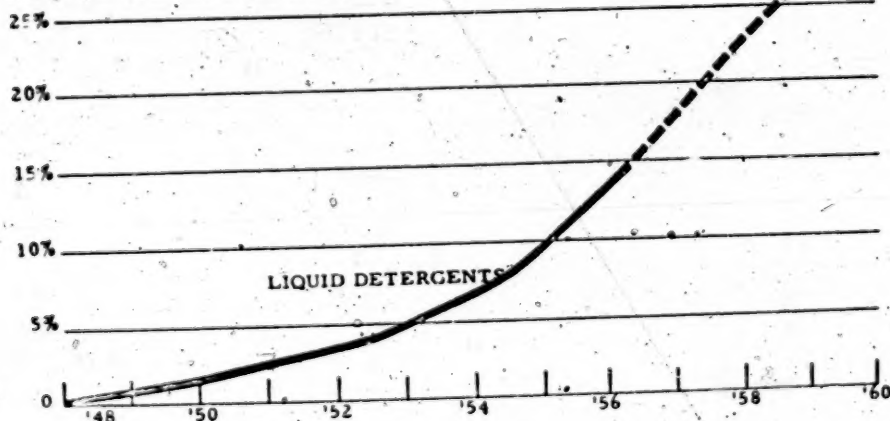
OPINION INFLUENCING GROUPS PREFER CANS



LIQUID DETERGENT

ULTIMATE WINNER OF LIQUID DETERGENT CONFLICT
MAY GAIN THE ENTIRE DETERGENT BUSINESS.

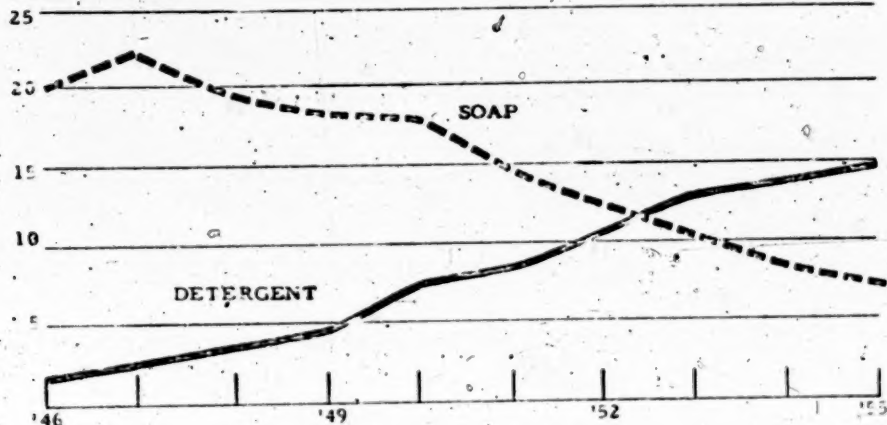
Percent of Total Detergent Volume



LIQUID DETERGENT

LIQUID DETERGENT WINNER MAY TAKE OVER
SOAP VOLUME, TOO

Pounds Per Person



COMMENTS

In the short period since Liquid Lux entered the market in cans, container competition has progressed rapidly to Stage Three. The brand leader, Joy, is now packed in both glass and tin, and many other brands have introduced tin cans.

Container competition is not confined to dishwashing detergents. All major brands are starting to pack heavy duty detergents in cans. Several marketers feel that eventually all detergents will be sold in liquid form.

Primary impetus for spreading use of cans for liquid detergent is the sales success of Liquid Lux. Within the industry, this success is attributed to Lux's drip-proof can. However, a pilot survey among consumers indicates that the can was relatively unimportant factor. The most important factors in buying a detergent have been (1) the well-known, well-established Lux name, (2) the fact that Liquid Lux is a very good product—exceptionally clean and easy on the hands.

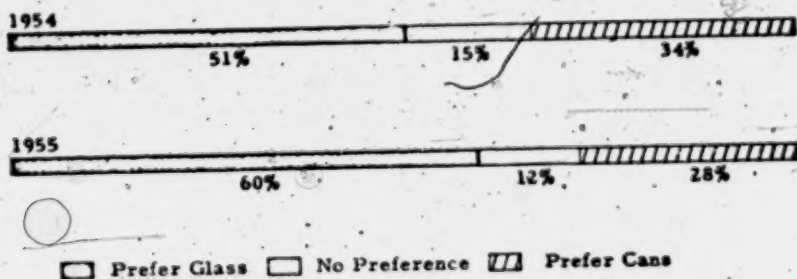
TOMATO JUICE

POTENTIAL CONTAINER COMPETITION

AN OPPORTUNITY FOR GLASS

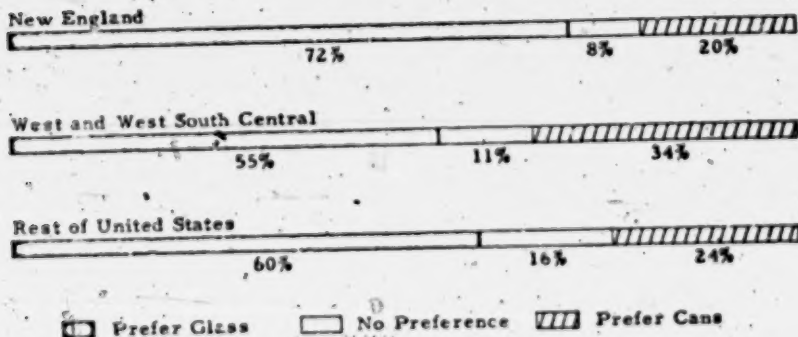
TOMATO JUICE

CONSUMER PREFERENCE IS 2 TO 1 FOR GLASS,
AND GROWING STRONGER



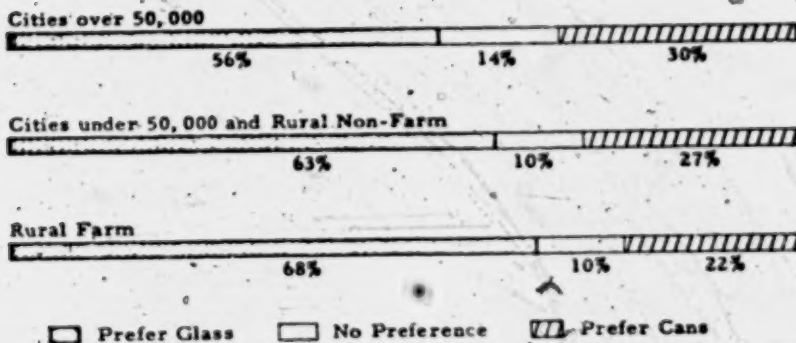
TOMATO JUICE

ACCEPTANCE OF GLASS IS HIGH IN ALL AREAS



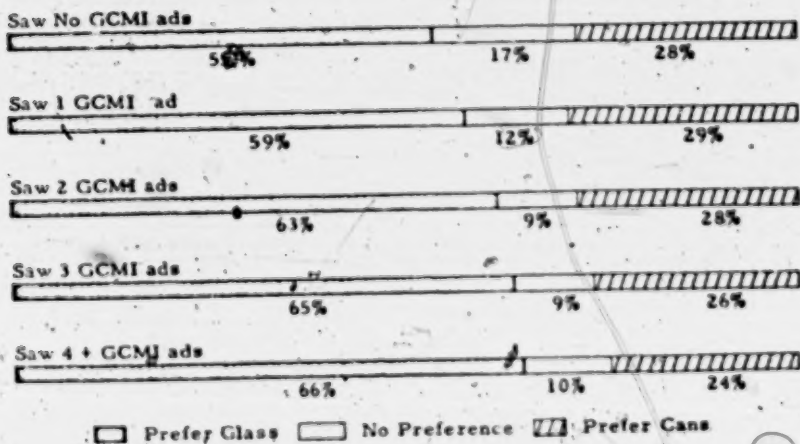
TOMATO JUICE

SMALL TOWN AND RURAL MARKETS OFFER
BEST OPPORTUNITY



TOMATO JUICE

GLASS PREFERENCE CAN BE INCREASED THROUGH
ADVERTISING



2004


TOMATO JUICE

POTENTIAL VOLUME IS LARGE.


90% of all U. S. families are users

Annual Sales = 4,650,000 gross units


Glass now has less than 4% of tomato juice volume

A 165,000 Gross 

If sales paralleled consumer preference, glass would have

2,700,000 Gross 

If this goal is accomplished, all will eventually go to glass

4,650,000 Gross 

COMMENTS

Glass packed tomato juice has been on the market for some time, but none of the brands packed in glass have wide consumer acceptance. Therefore, glass accounts for only 4% of total tomato juice sales.

Consumer preference for glass is so high that glass sales would increase materially if one or more of the major brands offered a glass pack, particularly if the container were featured in advertising and merchandising.

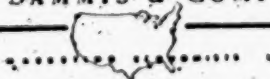
Glass preference is growing, the increase during the past year being most noticeable in New England. A well-known packer comments as follows on this point:

"It so happens that for the past couple of years we carried on an extensive advertising campaign in New England - one of our better markets for our Tomato Juice in glass, and we have shown very excellent results in total volume of sales which would bear out the decided improvement in preference as shown in your report."

GLASS CONTAINER MOTIVATIONS

Chart-talk delivered at Annual Meeting
of
Glass Container Manufacturers Institute, Inc.
at
White Sulphur Springs, West Virginia
May 22, 1957

FORD SAMMIS & COMPANY



2006



Glass Container Motivations

CONSUMERS ARE NOT NORMALLY CONTAINER CONSCIOUS

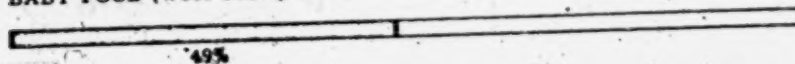
BRAND PREFERENCE MAY OUTWEIGH CONTAINER PREFERENCE

(% of those preferring glass who use glass)

TOMATO JUICE



BABY FOOD (West Coast)



A principle early established in the motivational research studies conducted for GCMC is that consumers are not normally "container conscious." They are inclined to take containers for granted, without devoting much thought to them, and concentrate their attention on the product inside the container.

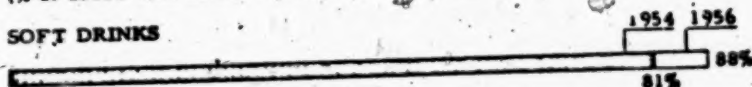
A corollary to this principle is that brand preference usually outweighs container preference. For example, in the chart above, it is shown that only 5% of those who prefer glass for tomato juice actually buy tomato juice in glass. While this is partly caused by spotty distribution of glass-packed tomato juice, lack of distribution is not a controlling factor in a similar situation existing for baby food. On the West Coast, where baby food is available in both glass and tin in practically every super-market, only 49% of those who prefer glass actually buy glass-packed baby food.

CONTAINER CONSCIOUSNESS IS INCREASING

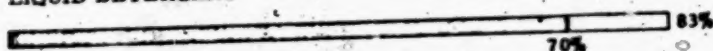
THE "NO PREFERENCE" GROUP IS GETTING SMALLER

(% of users with definite preference on containers)

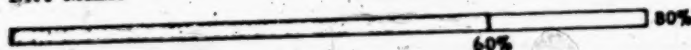
SOFT DRINKS



LIQUID DETERGENT



DRY MILK



Consumer consciousness of containers becomes more prevalent and active under two conditions:

- (1) When containers are brought to their attention, particularly through advertising
- (2) When a choice of containers is available for a specific product.

It is only natural, therefore, that container consciousness has been increasing during the past two years, as a result of advertising by GCM and manufacturers of other containers, coupled with active container competition in the fields of fresh milk, dry milk, liquid detergents, beer and soft drinks.

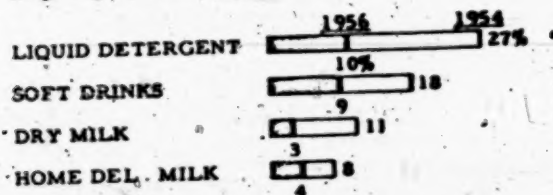
For those products, the result of increased container consciousness has been to sharpen consumer preference for one container or another. For example, in 1954, only 81% of all soft drink users had a definite container preference, the remaining 19% having no preference between cans and bottles. By 1956, all but 12% had acquired a definite container preference.

With liquid detergents and dry milk, the increase in container consciousness and preference is even more marked.

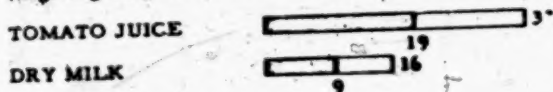
ATTENTION IS FOCUSSED ON SPECIFIC CONTAINER QUALITIES

"HABIT" IS A LESS IMPORTANT MOTIVATION

(% giving habit as reason for preferring glass containers)



(% giving habit as reason for preferring competing containers)

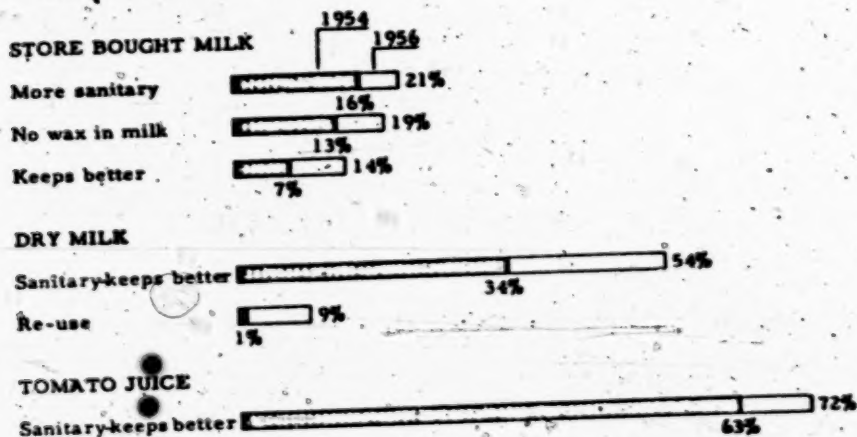


A concomitant of the recent increase in container consciousness has been focussing consumer attention on specific container qualities.

This is illustrated in the chart above by decrease in the generalized reason of "habit" as a motivation for preference of both glass and competing containers.

In 1954, 27% of those preferring glass jars for liquid detergent gave habit as a reason for preference. In 1956, as a result of consciously considering the advantages of glass vs. tin cans for this product, mention of habit dropped to 10% being replaced by such specific qualities as visibility of contents, ease of handling, and attractive appearance.

SANITARY FEATURES OF GLASS GAIN INCREASED RECOGNITION



The three qualities of glass containers that have evidenced the greatest gains in consumer acceptance and recognition are: sanitary features, flavor, and transparency.

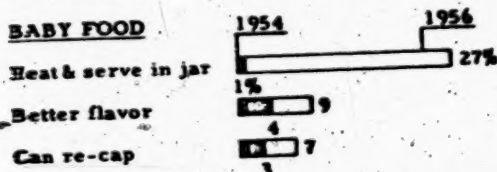
Increased impact of the sanitary features of glass (germ-free, lack of product contamination, safe storage of unused portions in opened containers) are apparent for store-bought milk, dry milk, and tomato juice. With dry milk, this factor is the major motivation, being mentioned by 54% of all who prefer glass jars, an increase from 34% mention in 1954.

Re-use, though minor, is a motivation of growing importance with dry milk. So is freedom of wax in the milk for store-bought fresh milk.

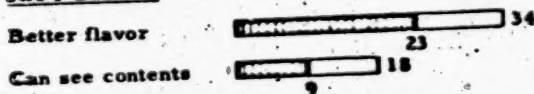
[fol. 365]

MORE IMPORTANCE ATTACHED TO FLAVOR AND VISIBILITY

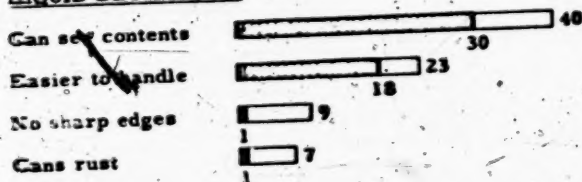
BABY FOOD



SOFT DRINKS



LIQUID DETERGENT



Better flavor, as a reason for preferring glass, was mentioned by more persons in 1956 than in 1954 for baby food and soft drinks. The increase for soft drinks was 23% to 34%.

Visibility of contents has increased for both soft drinks and liquid detergent. In the latter product, the increase has been from 30% to 40% of all who prefer glass.

One of the most dramatic examples of rapid emergence of a minor factor into a major motivation has occurred with baby food. In 1954, so little mention was made of ability to heat and serve in the container that no place was made for it in the IBM code of reasons for preferring glass baby food jars.

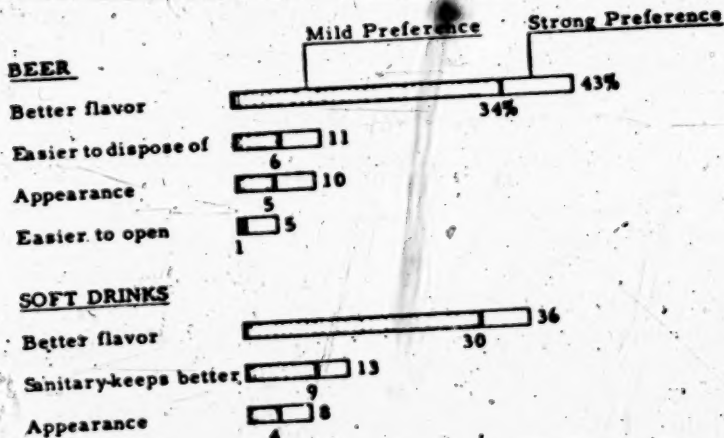
By 1955, heating in and serving from glass jars was listed by so many consumers that an investigation of causes was instituted. It was traced down to a single commercial on the GCMI television program, where this use was dramatically demonstrated.

The agency inserted this appeal into magazine copy in the 1955-56 campaigns, and the result is that this factor is now the second most important motivation for baby food jars, being exceeded only by ability to store unused portions safely in the opened jar.

2012

[fol. 366]

STRENGTH OF PREFERENCE IS FOUNDED ON SECONDARY AS WELL AS MAJOR MOTIVATIONS

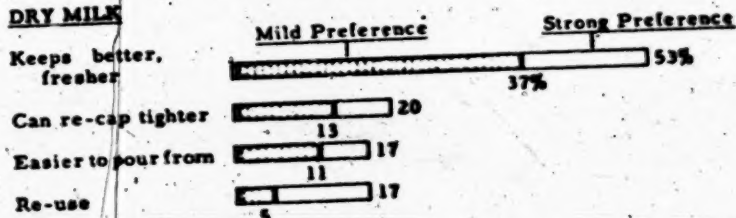
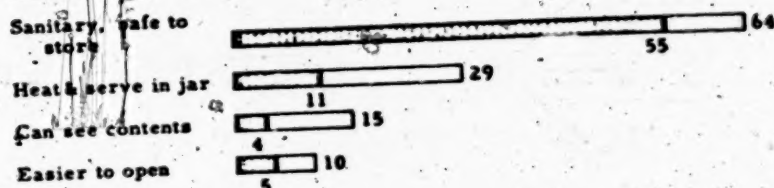


Rating of relative importance of various motivations is shown later on in this report for eight different products. The charts on this and the following page show that it isn't just the major factors that create strong preference for glass.

With beer, better flavor was mentioned by 43% of those having a strong preference for glass, but by only 34% of those whose preference for glass may be classified as mild. Better flavor, therefore, is a factor that creates greater strength of preference. So are the factors of ease of disposal, appearance, and ease of opening.

For soft drinks, the principal factors creating strong glass preference are flavor, sanitary features, and appearance.

[fol. 367]

DRY MILK**BABY FOOD**

Ability to safely store unused portions in the container is the principal factor affecting strength of preference for dry milk and baby food.

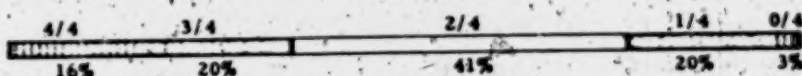
For dry milk, ability to re-cap and ease of removing contents are secondary factors. Re-use works in reverse, being less important to those who have a strong preference than to those having a mild preference.

For baby food, ability to heat and serve in the container, visibility of contents and ease of opening are secondary factors creating strong preference for glass.

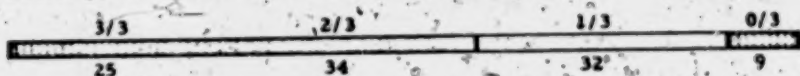
CONTAINER PREFERENCE DOESN'T CARRY OVER BETWEEN PRODUCTS

THERE IS VERY LITTLE "GENERAL" GLASS PREFERENCE

Preference For Glass - Users of 4 Products



Preference For Glass - Users of 3 Products



It was pointed out in 1954 that consumers consider each product as completely independent and different, as far as containers are concerned. The same consumer may prefer tin cans for beer; glass bottles for soft drinks. Container preference doesn't naturally carry over from one product to other products.

Such a carryover is, of course, an objective of GCMI's promotional campaign and is part of the advertising strategy. But it will take time to change consumer psychology and thought habits.

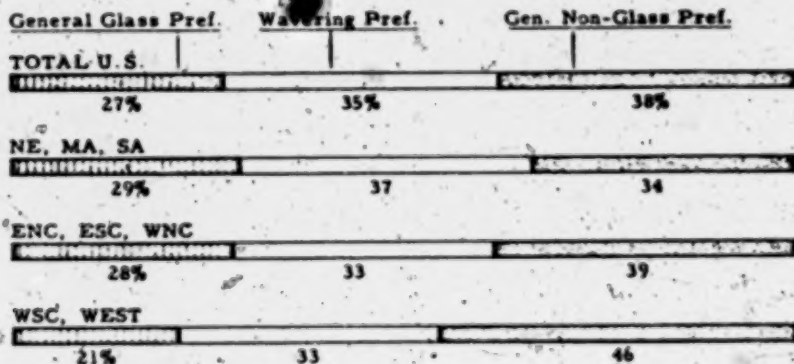
In an attempt to measure the degree of glass preference carryover between products existing at the present time, four products were selected where there might be a reasonable expectancy of inter-relation in container preference. These products were: liquid detergent, dry milk, fresh milk, and tomato juice.

It was found that among users of all four products, 16% preferred glass for all of them, 20% preferred glass for three out of the four, with 41% completely divided on container preference. In like manner, the majority of persons who use three of the four products, prefer glass for either one or two of the three products they use.

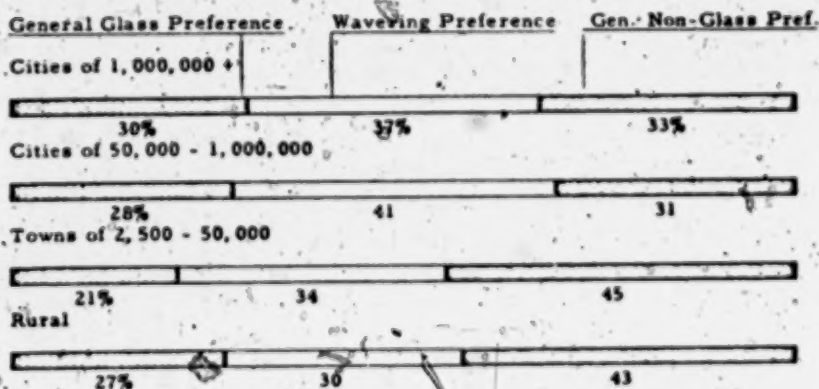
It may be concluded that from this that a certain amount of "general glass preference" exists, but its extent is limited at the present time to less than one-fourth of the population.

[fol. 369]

"GENERAL" GLASS PREFERENCE IS STRONGEST IN NORTHEAST, WEAKEST IN WEST



"GENERAL" GLASS PREFERENCE IS STRONGEST IN LARGE CITIES



From the chart on the preceding page, it may be considered that those who prefer glass for 3 or 4 out of four products used, or 2 or 3 out of 3 products used, possess "general glass-preference." The above charts show geographic and city size variations.

General glass preference is strongest in Northeastern states, weakest in the West. It is also strongest in large cities, weakest in small towns.

EACH PRODUCT INVOLVES DIFFERENT MOTIVATIONS, WITH VARYING EMPHASIS

- ☐ Major Motivation
☐ Secondary Motivation
☐ Minor Factor

Sanitary keeps better
 Better flavor
 Can see contents
 Easier to handle
 Appearance
 Heat/Serve in container
 Easy to open
 Easy to store
 Easy to dispose of
 Keeps colder
 Can re-cap
 Re-use
 Durability - doesn't leak
 Nothing gets in product
 No sharp edges
 No rusting

	SOFT DRINKS	BEER	MILK (Home del.)	MILK (Store bought)	DRY MILK	TOMATO JUICE	BABY FOOD	LIQUID DETERGENT
Sanitary keeps better				2				24
Better flavor		9			6			
Can see contents					2	2		
Easier to handle	7	8	2	3	4	4	4	
Appearance								
Heat/Serve in container	2	4	3	2	3		5	2
Easy to open	2	2			5	3		3
Easy to store	5	9	4	2				
Easy to dispose of	2	4	4	4				
Keeps colder	2	1	1	1		1	7	1
Can re-cap					9	3	4	
Re-use								
Durability - doesn't leak								
Nothing gets in product								
No sharp edges		1				1		9
No rusting								7

This chart sets forth the motivations for preferring glass for eight different products. Figures represent the percent of those preferring glass who mentioned each factor as a reason for preference.

Factors have been classified into major, secondary and minor factors for each product by color symbols. It will be noted that the sanitary features of glass are the most generally applied major factor, closely followed by better flavor. However, relative importance of these and other factors vary considerably from product to product.

Motivating factors are listed in the order of relative importance among all product classes combined.

(Note: Heat/Serve in container means "like to drink out of bottles" for beer and soft drinks.)

MOTIVATIONS ON COMPETING CONTAINERS

- ☐ Major
☐ Secondary
☐ Minor

No danger of breakage

Easier to dispose of

Easier to store

Easier to handle

Light

Lighter, easier to carry

Gets colder, faster

Better flavor

Sanitary, cleaner

Cheaper

Re-use

Easier to open

Better size

	SOFT DRINKS	BEER	MILK (Stone del.)	MILK (Store bought)	DRY MILK	TOMATO JUICE	BABY FOOD	LIQUID DETERGENT
No danger of breakage							6	4
Easier to dispose of			9				7	2
Easier to store	5		3	2		8	5	
Easier to handle		3		1	8			
Light	4	5	6		2	4		1
Lighter, easier to carry							3	
Gets colder, faster	3			1	3	1		
Better flavor	2			6		4		
Sanitary, cleaner					5	8	8	1
Cheaper			5	2				
Re-use	1	2	1	1	2	2	4	
Easier to open								5
Better size								

Danger of breakage is the most generally mentioned reason for preferring some other container than glass. It is a major motivation for competing containers with soft drinks, tomato juice, baby food and liquid detergent, and a secondary factor for all other products.

Ease of disposal of competing containers is the next most important factor working against glass, being a major factor with fresh milk and dry milk.

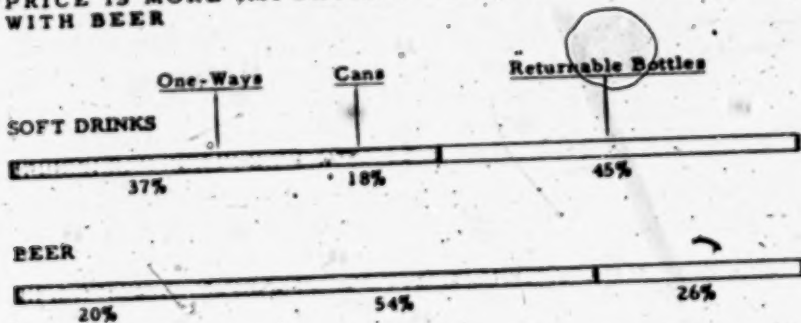
Factors are listed in their relative importance for all products combined.

2018

[fol. 372]

PRICE IS IMPORTANT ONLY WITH BEER AND SOFT DRINKS

PRICE IS MORE IMPORTANT WITH SOFT DRINKS THAN
WITH BEER

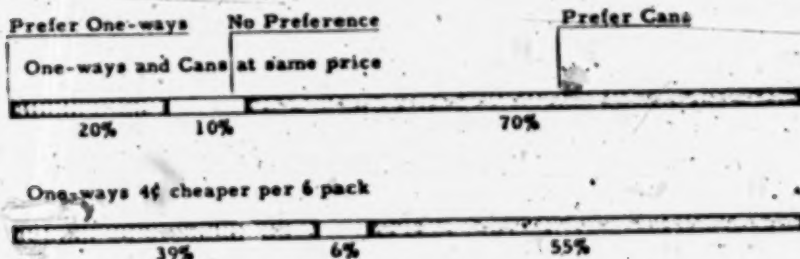


The chart above illustrates preference between cans, one-way bottles, and returnable bottles with the only difference in price being 2¢ refund on returnable bottles when taken back to the store. Preference for returnable bottles under these conditions is, in effect, a measure of extent of price consciousness among consumers.

For soft drinks, 45% prefer returnable bottles over either of the disposal containers. For beer, 26% prefer returnable bottles. It may be concluded that price is a factor with both beer and soft drinks, but is more important with soft drinks.

[fol. 37]

PRICE DIFFERENTIAL DOUBLES PREFERENCE FOR ONE-WAYS VS. CANS FOR CONSUMER'S FAVORITE BRAND OF BEER

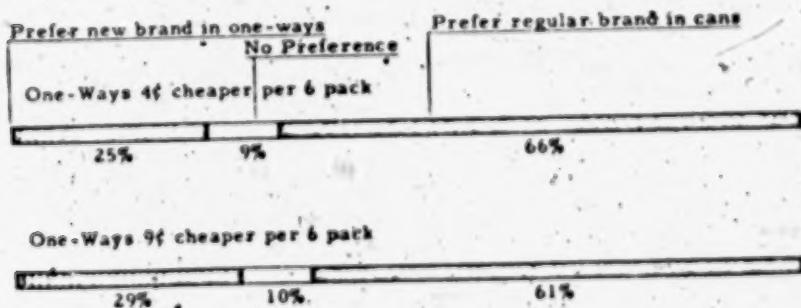


(Survey of Virginia Beer Drinkers - June, 1956)

In the survey of Virginia beer drinkers conducted in June, 1956, consumers were asked to choose between one-ways and cans for their favorite brand (a) at the same price and (b) with one-ways priced 4¢ lower per six pack. 20% chose one-ways at the same price as cans, 39% chose one-ways when they were 4¢ cheaper.

A NEW BRAND CAN GAIN 25% OF BEER MARKET WITH PRICE DIFFERENTIAL ON ONE-WAYS

Another approach used in this survey was preference between consumer's favorite brand in cans and some other brand in one-way bottles (a) 4¢ cheaper per six pack, and (b) 9¢ cheaper. 25% chose the other brand in one-way bottles at a 4¢ differential, and when the differential was increased to 9¢ preference for one-way bottles went up to 29%. This has been confirmed by actual sales tests in Norfolk where one-way bottles priced at 6.99¢ have secured 23% of total beer sales in stores carrying one-ways.



(Survey of Virginia Beer Drinkers - Jan. 1957)

**CONSUMER PREFERENCES AND
MOTIVATIONS ON CONTAINERS
1954 - 1957**

Chart Talk presented at
Semi-Annual Meeting of
Glass Container Manufacturers Institute
Virginia Beach, Virginia
October 1, 1957

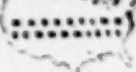
FORD SAMMIS & COMPANY


MADE IN THE U.S.A.

[fol. 373]

FORD SAMMIS & COMPANY 2021

730 COLORADO BOULEVARD
LOS ANGELES 41, CALIFORNIA
CLinton 3-7101



24 MILL LANE
HUNTINGTON, NEW YORK
HAMilton 7-4791

November 20, 1957

Glass Container Manufacturers Institute, Inc.
99 Park Avenue
New York 16, New York

Attention: Mr. Richard L. Cheney

Subject: Consumer Preferences & Motivations on Containers,
1954-1957

Gentlemen:

Transmitted herewith are reproductions of charts shown before
your Semi-Annual Meeting at Virginia Beach on October 1, 1957,
together with a transcript of my remarks.

This presentation represents both a summary of the 1957 national
consumer survey and important trends which have taken place since
1954 in the container field.

Sincerely,

Consumer Preference & Motivations On Containers

1954 - 1957

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FRUITS & VEGETABLES	19
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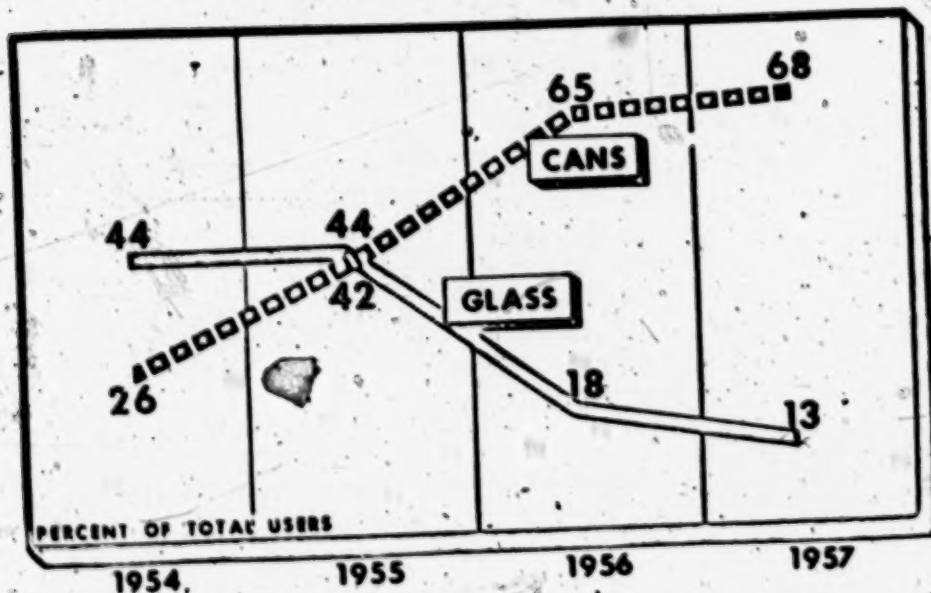
[fol. 377]

CONSUMER PREFERENCE FOR GLASS**1954-1957**

- Since 1954, there have been many changes in consumer preferences on containers. Out of nine important products, consumer preference has remained static on only three -- home-delivered milk, beer, and baby food.

Preference for glass has increased materially for store-bought milk, soft drinks, and fruits and vegetables. Glass has lost ground in consumer container preference for liquid detergents, dry milk and tomato juice.

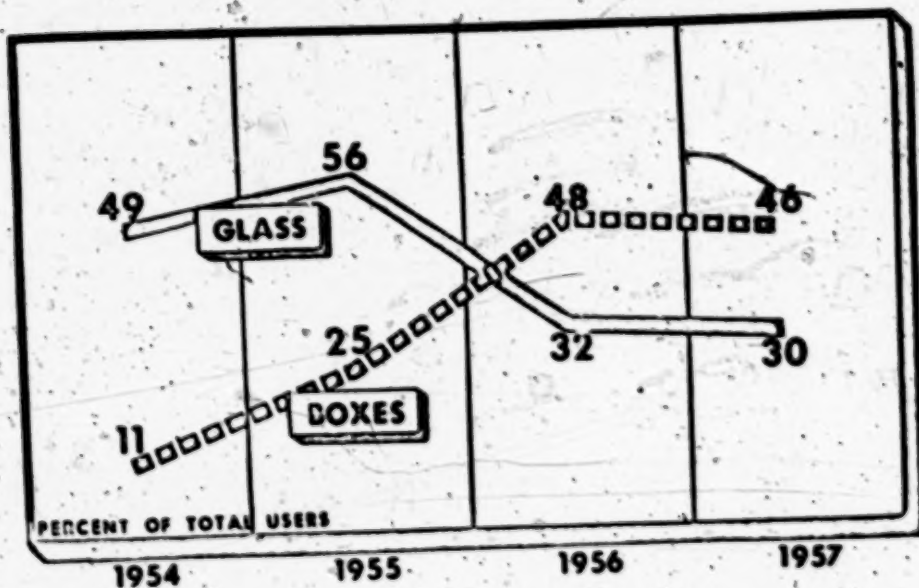
What has happened since 1954 in each of these product classifications is shown on the following charts.

LIQUID DETERGENT-**CONSUMER CONTAINER PREFERENCE**

In 1954, 44% of all liquid detergent users preferred glass, in contrast to 26% preference for tin cans. By the following year, can preference had caught up to glass, and has continued to climb since then to its present position of 63%.

During 1956 and 1957, a large number of brands were introduced to the market in cans. Joy is the only leading brand still packed in glass jars, and Joy is available in cans as well as jars. During this period, preference for glass has dropped rapidly to the low level of 13% in 1957.

[fol. 379]

DRY MILK-**CONSUMER CONTAINER PREFERENCE**

In 1954, glass enjoyed almost a 5 to 1 preference over cardboard boxes among dry milk users.

Carnation, with its new type of non-hygroscopic dry milk packed in a cardboard box, has made great gains in consumer acceptance since 1955, and is currently in No. 2 sales position. Along with Carnation's increase in sales has been a corresponding increase in preference for boxes to a current level of 46% of the market.

Glass preference has dropped to 30%.

DRY MILK-**CONTAINER MOTIVATIONS****GLASS**

	<u>1954</u>	<u>1957</u>
STAY FRESHER	34%	49%
DOESN'T CAKE		25
Easier to handle	16	10
Can See Contents	12	6
Habit	11	6
Re-use	-	7
Can Re-cap	20	5

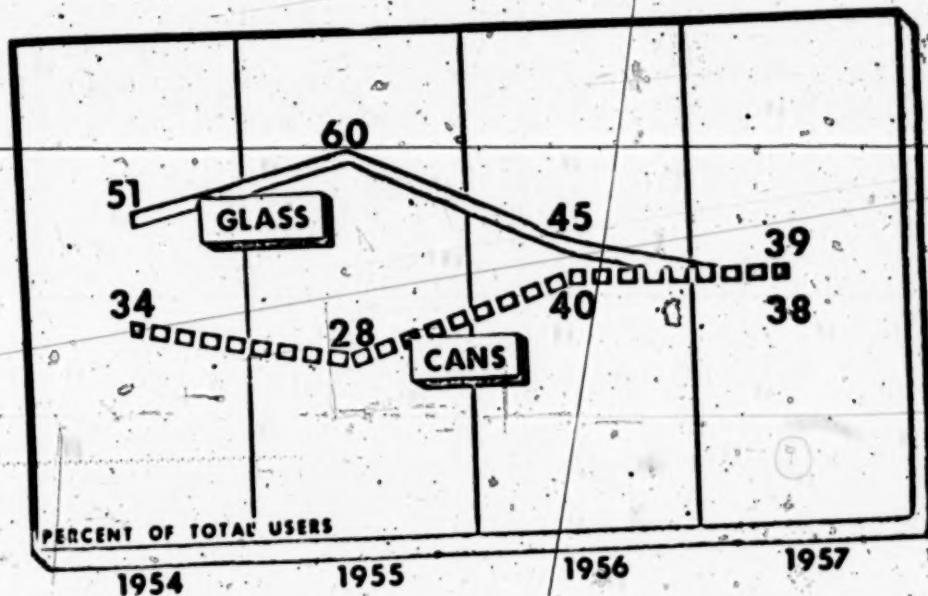
BOXES

	<u>1954</u>	<u>1957</u>
EASIER DISPOSAL	3%	20%
STORES BETTER	10	20
NO BREAKAGE	24	19
EASIER TO HANDLE		14
HABIT		11
BRAND IS IN BOXES		11
Cheaper	1	7
More Sanitary	32	5

Principal motivation for preferring glass for dry milk is its ability to keep the product fresh, without caking. This quality wasn't recognized as much in 1954, before Carnation was put on the market, as it is today, when consumers have had a chance to compare hygroscopic products, like Pel, with the non-hygroscopic Carnation, which doesn't require an air-tight container to remain non-caking.

Easier disposal and better storage, principal box motivations, have increased in importance since 1954. Danger of breakage of glass, on the other hand, is less important than 4 years ago.

[Col 384]

TOMATO JUICE-**CONSUMER CONTAINER PREFERENCE**

In spite of the fact that only a small percentage of the tomato juice pack is marketed in glass, 38% of all tomato juice users prefer glass. This is equal to the preference for tin cans.

During the previous 4 years, glass preference was even higher than it is now -- 60% in 1955. The decline is believed to be due to the increased percentage being packed in small size cans, eliminating the need for storing unused portions in the container. Under these circumstances, the major advantage of glass doesn't come into play.

TOMATO JUICE-**CONTAINER MOTIVATIONS****GLASS**

	1954	1957
STORE IN JAR		67%
BETTER FLAVOR		23
Habit		5
Can See Contents		4
Re-use		3
More Attractive		3

CANS

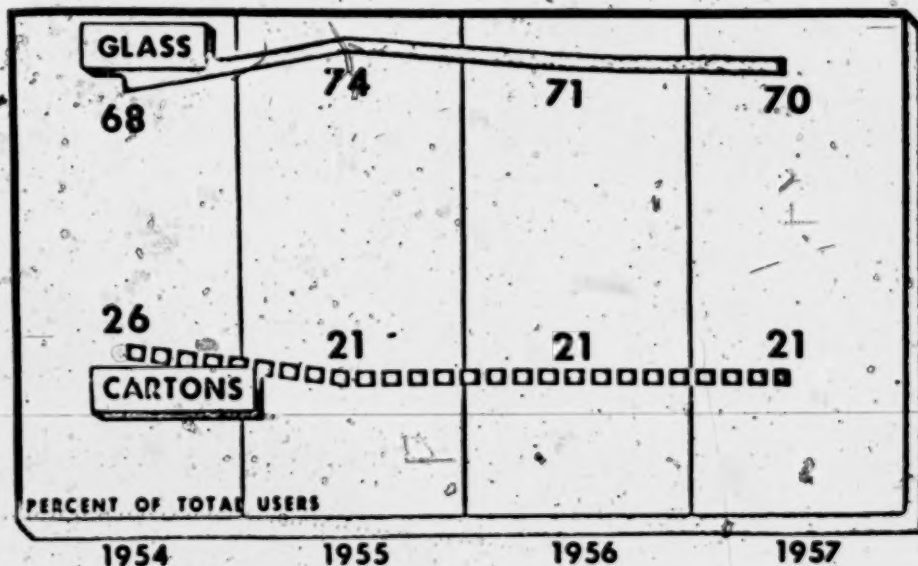
	1954	1957
NO BREAKAGE HABIT	20%	29%
	33	22
BRAND IS IN CANS		18
STORES BETTER		15
Cheaper		6
Sanitary		5

The dominant reason for preferring glass for tomato juice is consumers' belief that unused portions can safely be stored in glass, mentioned by 67% of those preferring glass. While this factor is non-operative in relation to small size cans which are used up in a single serving, it might become important when coupled with possible price savings of large size glass containers vs. small single-use tin cans.

Secondary motivation for glass is better flavor.

There are no strong basic reasons for preferring tin cans for tomato juice, except price (mentioned by 6% of those preferring tin cans).

{fol. 383}

HOME-DELIVERED MILK-**CONSUMER CONTAINER PREFERENCE**

There has been virtually no change in consumer preference for home-delivered milk containers during the past three years. Glass remains in a dominant position, with 3 1/2 times the preference of cartons.

HOME-DELIVERED MILK-**CONTAINER MOTIVATIONS****GLASS**

	<u>1954</u>	<u>1957</u>
CARTONS LEAK		28%
MORE SANITARY	20	27
BETTER FLAVOR		25
NO WAX IN MILK	14	23
EASIER TO HANDLE	16	10
Can See Contents		6
Habit	11	6
Gets Colder	10	5

CARTONS

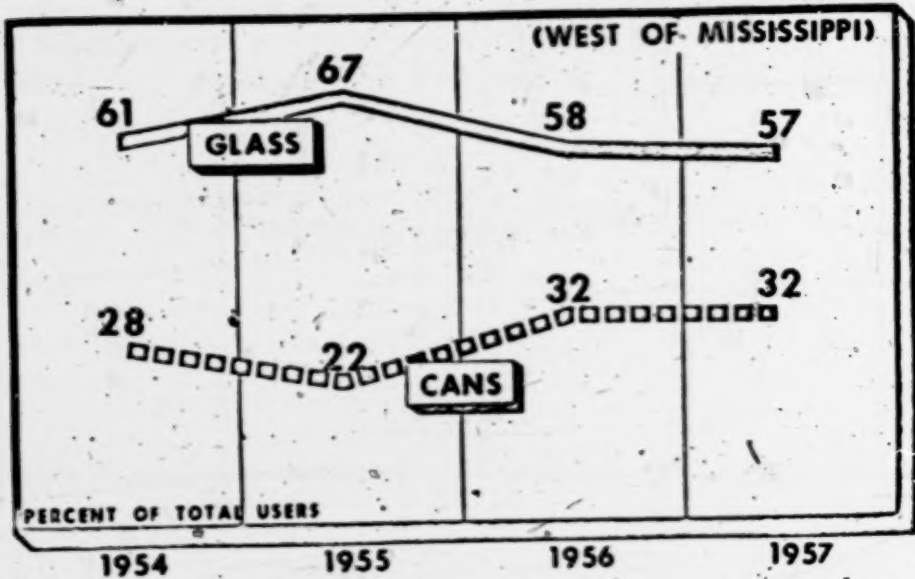
	<u>1954</u>	<u>1957</u>
EASIER DISPOSAL		72%
NO BREAKAGE		27
STORES BETTER		11
Re-use	2	7
More Sanitary		6
Easier To Handle		6
Lighter		5

There have been no changes (except re-use) in any of the factors motivating preference for cartons. The dominant motivation is easier disposal, mentioned by 72% of those preferring cartons for home-delivered milk.

On the other hand, several changes have taken place in relative importance of reasons for preferring bottles. "More sanitary" has increased in importance, from 20% to 27%. This factor has been stressed in G. C. M. I. advertising. "No wax in milk" has increased from 14% to 23%, which may be a result of the "clean taste" appeal used in G. C. M. I. ads.

Several minor factors have decreased in mention.

[fol. 385]

BABY FOOD-**CONSUMER CONTAINER PREFERENCE**

This chart relates only to the area west of the Mississippi, where glass jars are in competition with tin cans for the baby food market.

Container preference has remained fairly stable during the last four years in the baby food field. Preference for glass has consistently been above 57%, can preference has not risen above 32%. Thus, in consumer preference, glass leads tin 2 to 1, whereas almost the reverse situation exists in sales, due to the dominance of Gerber, the only major brand still packed in tin in this area.

BABY FOOD-**CONTAINER MOTIVATIONS****GLASS**

	<u>1954</u>	<u>1957</u>
STORE IN JAR		80%
HEAT & SERVE IN JAR		11
Habit	4	7
Better Flavor		6
Can See Contents		6
Easier To Handle		4
Re-use	8	3

CANS

	<u>1954</u>	<u>1957</u>
NO BREAKAGE		35%
CHEAPER	13	30
BRAND IS IN CANS		20
HABIT		17
Stores Better	21	4
Easier To Handle	13	4
Lighter	8	3

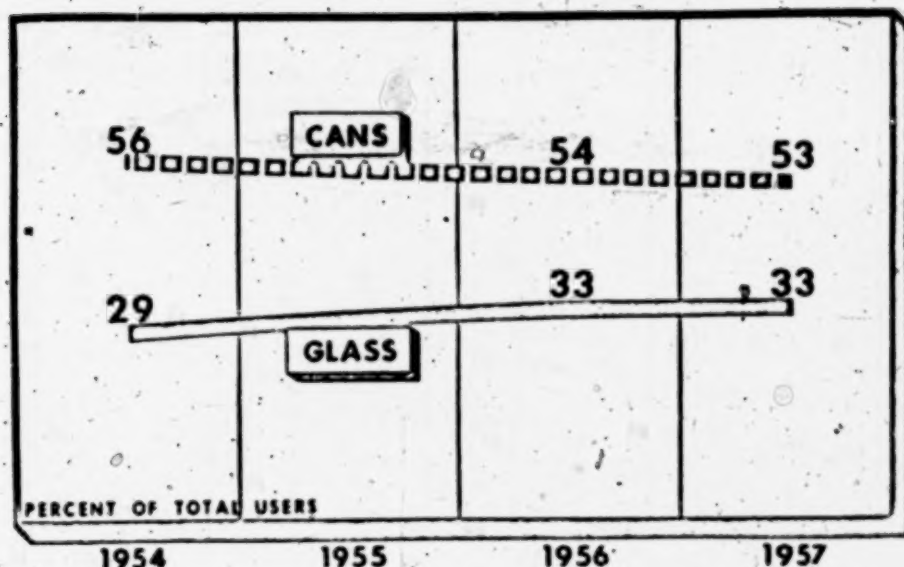
In 1954, Beechnut was the only brand in glass in the area West of the Mississippi, and its distribution and sales penetration was so low that few baby food users had had any direct experience with glass-packed baby food. Asking their preference on container was therefore largely a hypothetical question.

Since then, Heinz has entered the market in glass and there is hardly a super-market that doesn't carry glass-packed baby food. An interesting change in motivations has developed from the 1954 hypothetical situation to the condition of actual experience existing in 1957.

As consumers have been able to see cans and jars side by side, they have changed their minds regarding cans' supposed superiority on storing better, easier to handle and lightness. Conversely, it has become apparent to more of them that cans are cheaper, which has made this a major motivational factor.

Increased experience with glass has brought about a lower valuation placed on re-use.

[fol. 387]

BEER-**CONSUMER CONTAINER PREFERENCE**

Beer container preference has exhibited no violent fluctuations, but there has been a slight increase in acceptance of glass as a beer container, as shown above. This chart represents preference between cans and one-way bottles at the same price. One-third of all beer drinkers currently prefer one-way bottles over cans.

BEER-**CONTAINER MOTIVATIONS****GLASS**

	<u>1954</u>	<u>1957</u>
BETTER FLAVOR	36%	55%
DRINK FROM CONTAINER	12	19
Keeps Better		13
Can See Contents	6	10
Easier To Handle	2	6
Gets Colder		6
Habit		6

CANS

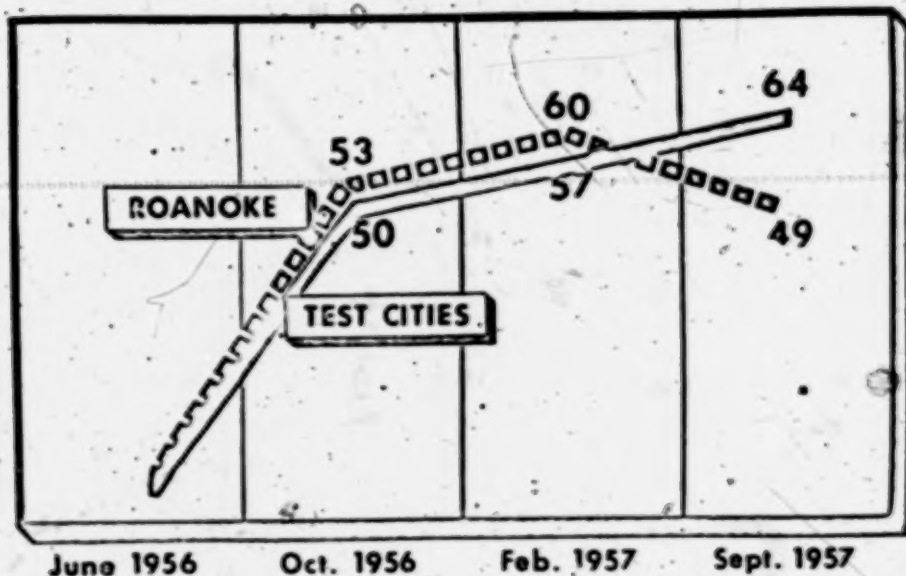
	<u>1954</u>	<u>1957</u>
GETS COLDER	26%	44%
STORES BETTER	26	35
NO BREAKAGE	23	32
BETTER FLAVOR		19
EASIER DISPOSAL		10
Lighter		6
Easier To Handle	1	6
Drink From Can	8	5

Motivations, unlike preference, have undergone considerable change in the beer field. All major motivations for both cans and one-way bottles are getting stronger, indicating that consumers are giving more serious consideration to beer containers.

Better flavor for bottles has increased from 36% to 55% of those who prefer bottles. The factor of drinking from the bottle is also up.

For cans, there is greater importance of getting colder (which also means gets cold faster and stays cold longer); ease of storage; and no danger of breakage. Liking to drink from the can is less important.

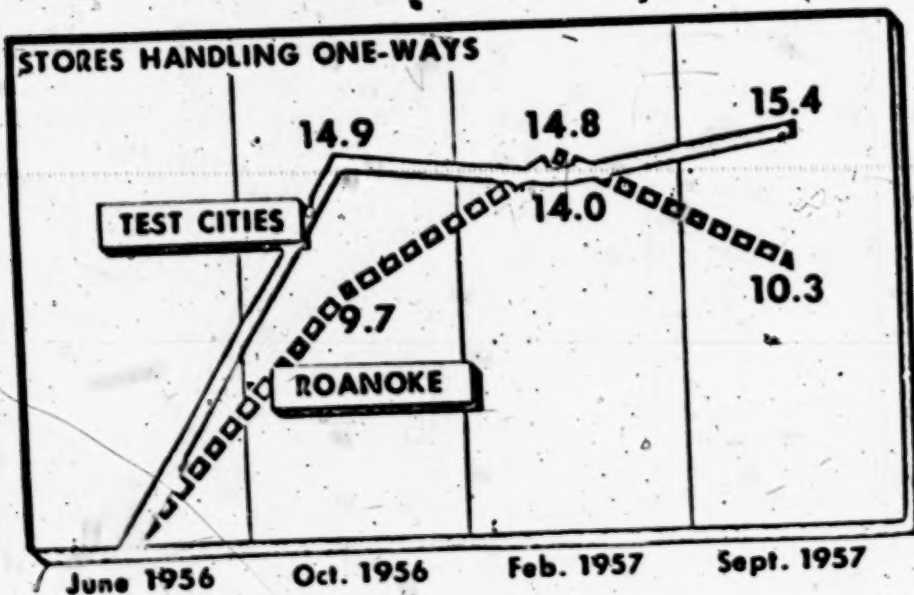
[fol. 389]

DEER-**ONE-WAY DISTRIBUTION IN VIRGINIA**

In June, 1956, one-way beer bottles were legalized in Virginia. Several brewers entered the market with one-ways, accompanied by radio and TV advertising. GCMC conducted a newspaper advertising campaign in three test markets - Alexandria, Richmond and Norfolk.

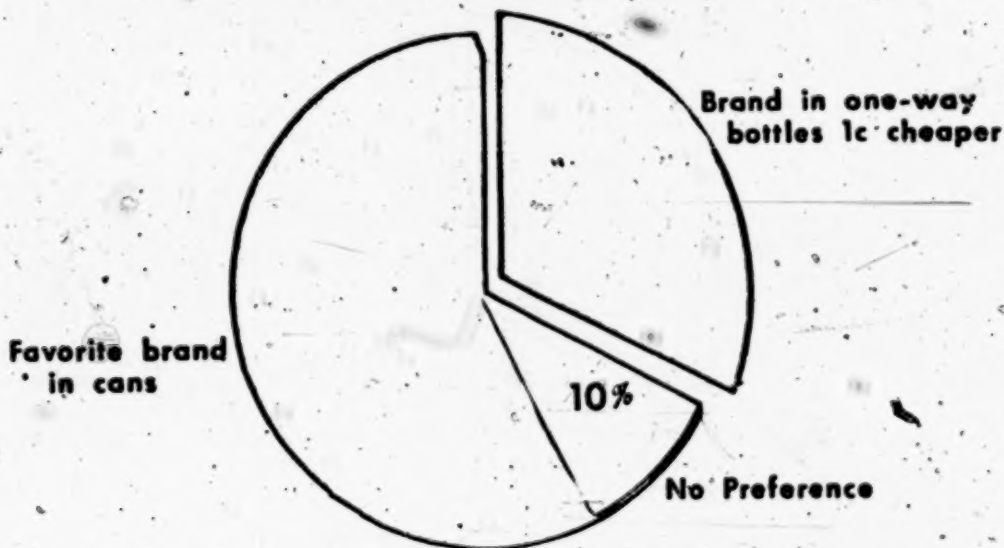
This chart shows the percentage of beer outlets handling any brand of one-way bottles in the three test markets, and in Roanoke, a control city where no advertising was done.

One-ways achieved 50% - 53% distribution in both test and control cities within four months after legalization, going up to 57% - 60% by February, 1957. Since then, distribution has dropped off in Roanoke, where no advertising was done, but has continued to climb to 64% in the test cities.

BEER-**ONE-WAY SHARE OF MARKET IN VIRGINIA**

In the test cities, one-way sales climbed rapidly within four months to 14.9% of total beer sales in those stores handling one-way bottles. Sales have stayed at this level ever since, increasing slightly to 15.4% in September, 1957.

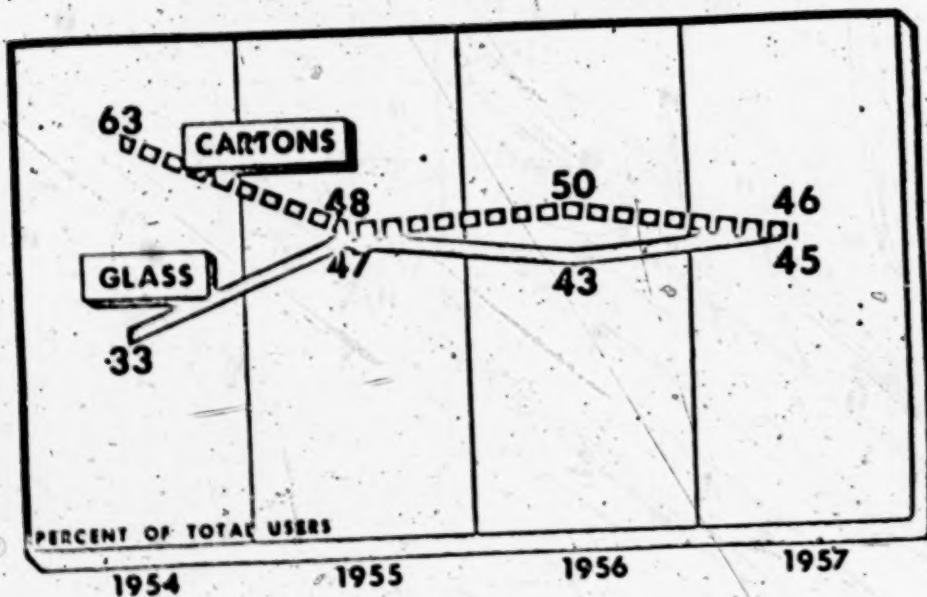
In Roanoke, where no advertising was done, sales increased at a slower rate, but reached a level equal to the test cities in February, 1957. Since then, however, Roanoke sales have declined to 10.3% of total beer volume.

BEER-**FAVORITE BRAND IN CANS VS. SOME OTHER BRAND
IN ONE-WAY BOTTLES, 1¢ CHEAPER**

In Virginia, the three brewers who achieved greatest success with one-way bottles priced them at 6/99¢, compared with 6/\$1.08 for sectional brand cans and 6/\$1.25 for premium brand cans.

Under this price situation, surveys conducted in Virginia indicated that 29% of all beer drinkers would switch from their favorite brand in cans to a lower priced brand in one-way bottles. Sales results in the Norfolk area confirmed this finding.

To determine whether this same sensitivity to lower price existed in other parts of the country, the same question was asked of all beer drinkers in the national survey sample in August, 1957. 32% indicated they would switch to some other brand in one-ways, if that brand were 1¢ cheaper.

STORE-BOUGHT MILK-**CONSUMER CONTAINER PREFERENCE**

In 1954, it was found that a surprisingly large 33% of all store buyers of milk preferred glass bottles, even though practically no milk was sold in bottles through stores at that time.

Since then, preference for bottles has increased to 46%, slightly higher than the existing preference for cartons.

[fol. 393]

STORE-BOUGHT MILK-**CONTAINER MOTIVATIONS****GLASS**

	<u>1954</u>	<u>1957</u>
CARTONS LEAK		33%
MORE SANITARY	16	30
NO WAX IN MILK	13	30
BETTER FLAVOR		23
Easier To Handle	14	7
Can See Contents	10	5
Gets Colder		5

CARTONS

	<u>1954</u>	<u>1957</u>
EASIER DISPOSAL	67%	72%
NO BREAKAGE		19
STORES BETTER		10
More Sanitary	3	8
Lighter	20	7
Easier To Handle	2	6
Re-use		4
Habit		4

The principal motivation for cartons is easier disposal (not having to take bottles back to the store), mentioned by 72% of those preferring cartons. "Cartons are lighter," which was an important reason in 1954 has dropped to only 7% mention in 1957, probably because few persons can remember what it used to be like to carry bottled milk home from the store.

A number of changes have taken place in bottle motivations. "More sanitary" and "no wax in milk" have doubled in importance, becoming major motivations. (See comments on G.C. M.I. advertising under Container Motivations for home-delivered milk).

2040

[fol 394]

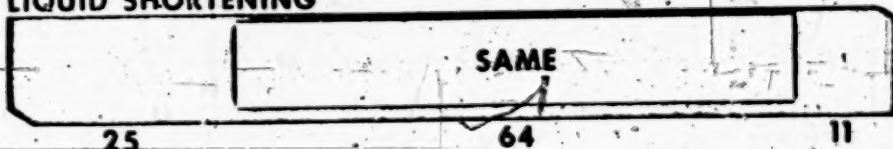
SALAD & COOKING OIL

CONSUMER CONTAINER PREFERENCE

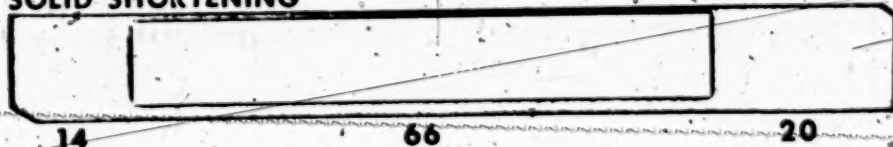


USE, COMPARED TO YEAR AGO

LIQUID SHORTENING

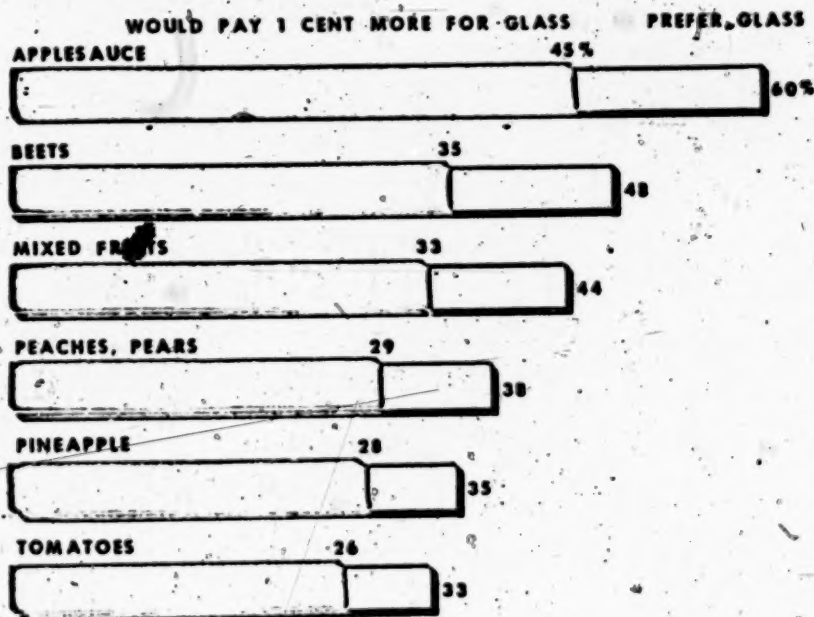


SOLID SHORTENING



As shown by the top bar, 68% of all salad oil users prefer glass, giving glass a 5 to 1 ratio over tin.

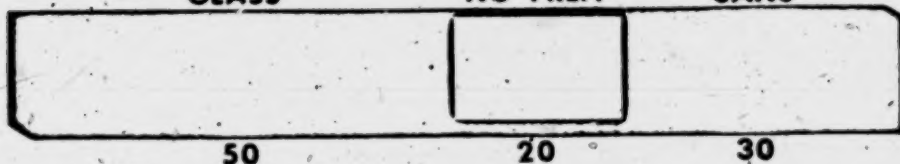
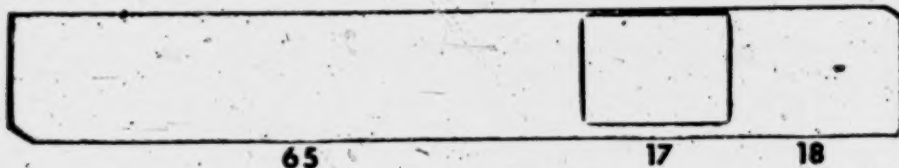
The two bottom bars reveal a trend from solid to liquid type shortening that is currently taking place. 20% are using less solid shortening than they did a year ago. 25% are using more liquid shortening.

FRUITS & VEGETABLES

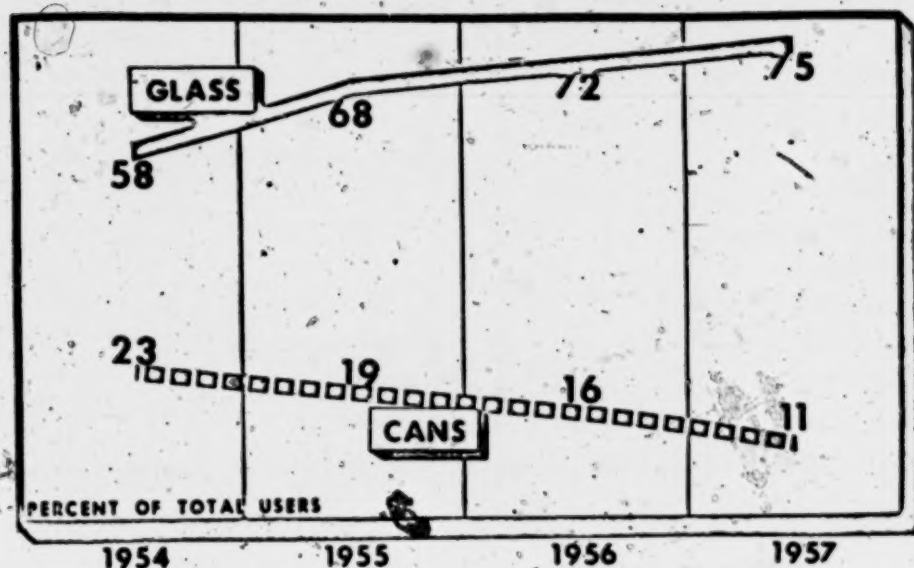
The total lengths of the bars above (red plus yellow) show the percentage of users who prefer glass for each product listed. The red portion of the bars reflects the percent of users who would pay 1¢ more per jar to obtain glass.

It is obvious from this chart that there exists not only wide acceptance of glass in the fruit and vegetable field, but also that there is a genuine consumer demand for glass.

60% of all applesauce users prefer glass; 45% are willing to pay 1¢ more per jar for glass. The same situation, in lesser degree, exists for the other products shown.

SOFT DRINKS-**CONSUMER CONTAINER PREFERENCE****1954****GLASS****NO PREF.****CANS****1957**

Consumer preference for bottles as a soft drink container has increased from 50% to 65% since 1954. Conversely, can preference has decreased from 30% to 18%. This chart covers a complete cross-section of soft drink users - men, women and children of all ages.

SOFT DRINKS- WOMEN**CONSUMER CONTAINER PREFERENCE**

To show the trend in soft drink container preference year by year, the above chart on women drinkers only indicates that can preference has been steadily declining, while bottle preference has been steadily rising.

This chart, and the preceding one, reflect preference between cans and one-way bottles at the same price, which measures preference for container material without extraneous factors. A measure of preference which takes into account the 2¢ differential on returnable bottles is as follows:

	All Users	Men	Women	Children
Prefer returnable bottles	55%	43%	54%	62%
Prefer one-way bottles	22%	27%	27%	15%
Prefer cans	9%	12%	6%	9%
No preference	14%	16%	13%	14%

SOFT DRINKS-**CONTAINER MOTIVATIONS****GLASS**

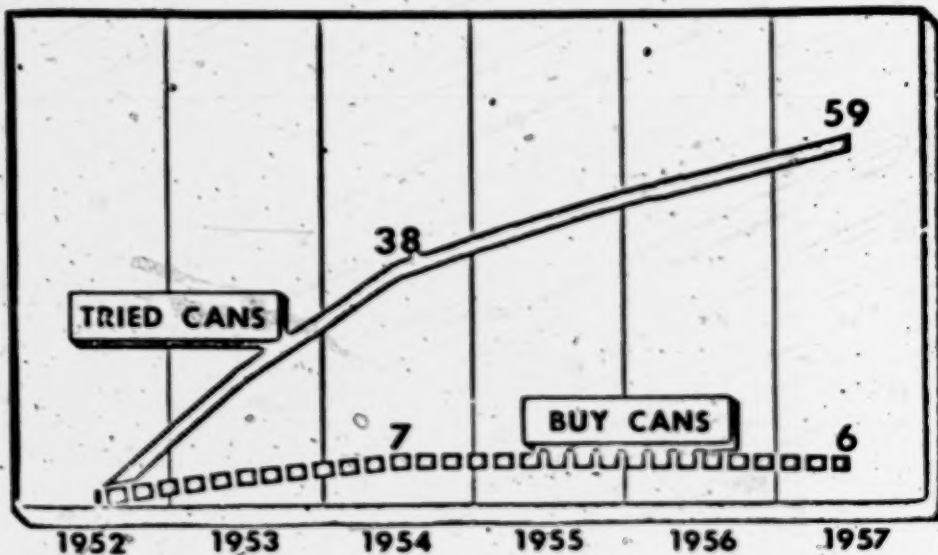
	1954	1957
BETTER FLAVOR	24%	37%
DRINK FROM BOTTLE	18	27
SANITARY		14
CAN SEE CONTENTS	8	13
HABIT		12
Easier To Handle	3	9
Can Re-cap	2	5

CANS

	1954	1957
NO BREAKAGE	39%	54%
GETS COLDER, FASTER	11	22
STORES BETTER	13	18
EASIER DISPOSAL		12
Better Flavor		8
Easier To Handle	1	7
Habit	1	5
Lighter		4

Better flavor and drinking from bottle are leading reasons for preferring bottles for soft drinks. Both have increased in importance since 1954, along with visibility of contents and ease of handling.

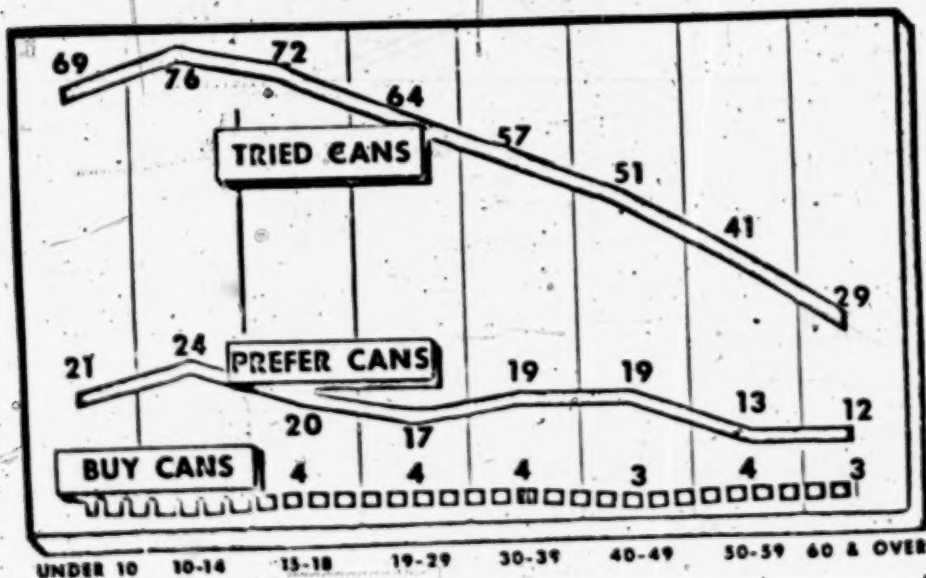
No danger of breakage is the most important factor affecting can preference. Since can preference has declined to the hard core of real can lovers, this factor has become of greater significance percentage-wise.

SOFT DRINKS-**SAMPLING & SALES OF CANS**

It is possible to reconstruct from G. C. M. I. national consumer surveys a complete history of can penetration since canned soft drinks were first put on the market in 1952.

Within two years, bottlers of canned soft drinks had succeeded in getting 38% of all soft drink users in the United States to try their product. By 1957, a total of 59% had tried canned soft drinks, but rate of penetration of the market is slowing down.

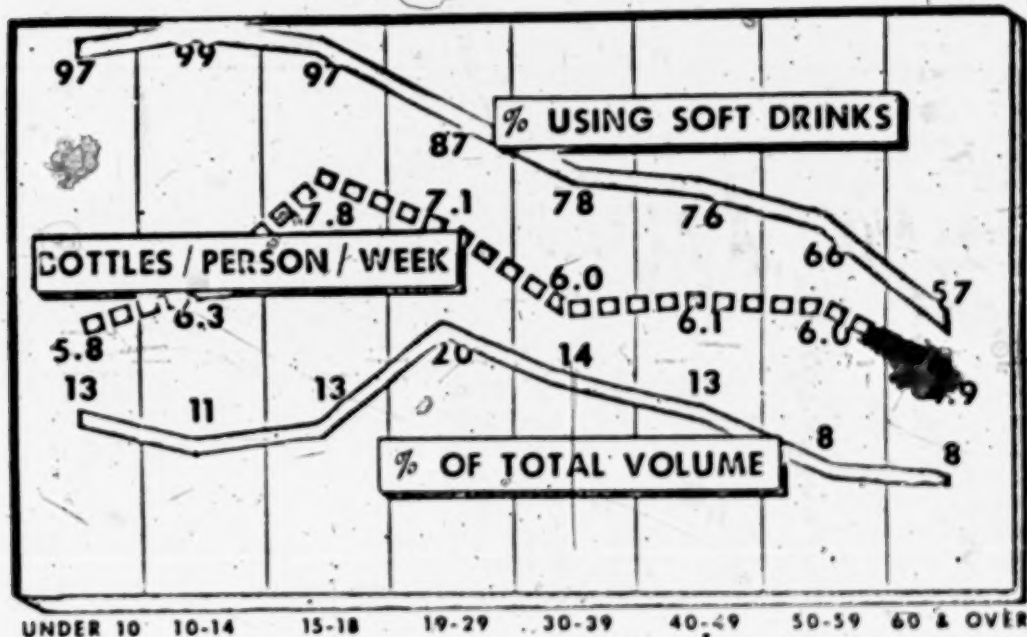
In spite of this wide sampling campaign, few persons have switched permanently to cans. At no time since 1952 have more than 7% of total soft drink users been regular purchasers of cans. Furthermore, most of those who buy cans also buy bottles, more bottles than cans.

SOFT DRINKS-**CAN PENETRATION BY AGE GROUPS**

Canned soft drinks have had their greatest success with children, reaching their peak in the 10-14 year age group (sub-teenagers). 76% of this group have tried cans.

Penetration of the can-sampling campaign falls off steadily as age increases. Only 29% of the 60 and over group have tried canned soft drinks.

Preference for cans over one-way bottles decreases slightly with age, but regular use is steady. However, sales of canned soft drinks don't constitute over 4% of total soft drink purchasers in any age group.

SOFT DRINKS-**CONSUMPTION BY AGE GROUPS**

This chart shows soft drink consumption by age groups, regardless of type of container.

The top bar represents percent of total persons (both sexes) in each age group who use soft drinks. The dotted bar shows the average number of bottles per person per week for soft drink users in each age group.

It is obvious that soft drinks are virtually a universal beverage among children and teen-agers, with highest per capita consumption among the high school group. Extent of use drops off steadily as age increases, but per capita consumption remains at a level plateau of 6 bottles per week until age 60.

The bottom line represents the percent of total soft drink volume consumed by each age group. The 10-18 year old group (covering two columns of the chart) accounts for 24% of total volume. However, from an advertising standpoint, the 19-39 group may be more important, since they not only account for 34% of total volume themselves, but are also the parents of the high per capita children.

[fol. 402]

GOVERNMENT'S EXHIBIT 85

Minutes of Meeting

Market Research and Promotion Committee
 GCMC Conference Room
 New York, New York

April 14, 1954

Present:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Co., Inc., J. S. Algeo—Hazel-Atlas Glass Company, C. G. Bensinger—Owens-Illinois Glass Company, E. J. Costa—Crown Cork and Seal Company, J. C. Feagley—Armstrong Cork Company, W. V. Fisher—Anchor Hocking Glass Corporation, J. S. Heuveler—Maryland Glass Corporation, G. A. Mingle—Brockway Glass Company, Inc., P. O'C. White—White Cap Company.

Absent:

E. F. Ball—Ball Brothers Company, Inc., F. H. May—Foster-Forbes Glass Company.

Others Present:

R. L. Cheney—GCMC, S. B. DeMerrell—Anchor Hocking Glass Corporation, J. W. Fisher—Ball Brothers Company, Inc., V. L. Hall—GCMC.

1. Call to Order.

The meeting was called to order by Chairman Pollock, who presided. Mr. Cheney acted as Secretary.

2. The minutes of the previous meeting, held on November 10, 1953 were approved as issued by the Secretary.

3. Plans and Organization—Progress Report.

(a) Mr. Cheney reported that good progress has been made in the basic Market Research phase of the Division activity. Continuing data collection is proceeding under the direction of a trained research assistant, and a library-type file is set up, containing current data from some 35

business publications, all government sources, newspapers, and many research organizations and associations.

(b) Mr. Ford Sammis has been engaged on a retainer and per diem basis (for extra time) as Market Research consultant. Other organization progress has been disappointing. In spite of widespread search and over thirty interviews, neither a satisfactory Public Information Director nor Packaging Engineer has yet been located.

[fol, 403] 4. Depth Survey.

The plans for Depth Studies on Glass Containers presented by Ford Sammis in his proposal of March 15, 1954, were discussed and a progress report was given of the work accomplished to date. Numerous suggestions were made as to the proposed areas of opinion to be studied, and Mr. Cheney was instructed to listen to recordings of early interviews and guide the survey in line with Committee recommendations.

The Committee expressed a desire to hear sample recorded interviews at its next meeting. The target date for completion of the survey being May 15th, the Committee requested that Mr. Sammis report on this at the May membership meeting.

5. Task Groups.

Mr. Cheney requested the Committee to recommend two task groups made up of Sales Managers to whom he could turn for guidance as needed. Upon motion duly made, seconded and unanimously passed, it was

Resolved that the Board of Trustees be requested to appoint two task groups comprised of representatives of the following member companies:

Glass Company Task Group

- Anchor Hocking Glass Corporation
- Armstrong Cork Company
- Ball Brothers Company, Inc.
- Brockway Glass Company, Inc.
- Carr-Lowrey Glass Company
- Glass Containers, Inc.
- Hazel-Atlas Glass Company

Lamb Glass Company
 Laurens Glass Works, Inc.
 Maryland Glass Corporation.
 Owens-Illinois Glass Company
 Thatcher Glass Manufacturing Co., Inc.

Closure Company Task Group

Anchor Hocking Glass Corporation
 Armstrong Cork Company
 Bernardin Bottle Cap Co., Inc.
 Crown Cork & Seal Company
 Owens-Illinois Glass Company
 White Cap Company

[fol. 404] 6. Baby Food Situation.

A quick survey of the St. Louis baby food market had been made by GCMI staff members and was presented, and the national market for baby foods in glass was studied and discussed. Further action was deferred for three months.

7. Carbonated Beverage Situation.

Mr. Cheney gave a report of the recent West Coast Sub-Committee meeting wherein the seriousness of the competition from soft drink cans was emphasized. He read a resolution of the Sub-Committee recommending that a consumer and dealer attitude survey be conducted in California and in an appropriate eastern market, to determine the progress and acceptance of the can as a soft drink container.

Recent developments and reports of the progress of cans in markets across the country were reviewed, and a One-Way bottle "test market" merchandising program proposed by a soft drink parent company was discussed. It was the consensus of the Committee that the GCMI newspaper advertising program suggested by the latter company could not be considered at this time.

The Director of Market Research and Promotion was instructed that the Committee policy with regard to the soft drink situation for the present was to keep close watch of new developments, to recommend and promote the use of One-Way bottles in those markets where there was a consumer demand for a No-Deposit package, and to recommend, as the occasion arises, that individual bottlers pro-

teet their industry by vigorously advertising the advantages of beverages in bottles.

Soft Drink Survey. Upon motion duly made, seconded and unanimously carried, the Director was authorized to proceed with a Survey of Consumer & Retailer Attitudes toward soft drinks in cans, in the Philadelphia and California areas, as proposed by the Ford Sammis organization in its letter of March 26, 1954.

8. Beer and Soft Drink Packaging Cost Studies.

After reviewing a report covering the need and use to be made of certain proposed packaging cost studies in the beer and soft drink fields, the Committee asked the Director to obtain definite proposals from two or three cost engineering agencies, outlining specifically what information would be obtained, together with a definite plan as to its use. This is to be discussed further at the next meeting, and a special survey of beer distributors is to be considered.

9. Milk Bottle Public Relations Committee.

Messrs. Hall and Cheney reported progress made by the Milk Bottle Public Relations Committee, particularly as to [fol. 405] the Buffalo and Milwaukee test campaigns. No survey data of results is yet available but dealer reaction indicates considerable success. The Committee has recommended a third test campaign in the St. Louis area, and Mr. Hall reported that milk bottle manufacturers representing over 90% of milk bottle production had signified their desires to contribute to a fund to aggregate \$35,000 for this purpose, at the rate of 5 cents per gross of milk bottles shipped, until the total is reached, and that the Committee recommends approval of this project.

Upon motion duly made, seconded and unanimously passed, it was

Resolved that the recommendation of the Milk Bottle Public Relations Committee be approved and that the Board of Trustees be requested to authorize the proposed program.

10. Publicity Activities:

Examples of continued bad press notices regarding glass containers based on inaccurate, uninformed or biased views, were cited, along with opportunities for constructive publicity. It was the consensus of the meeting that these situations should be promptly handled, and that this pointed up the need for early engagement of a Public Information Director.

11. Next Meeting.

It was decided to hold the next meeting of this Committee at The Greenbrier; White Sulphur Springs, West Virginia, at 1:00 P.M. on Sunday, May 16, 1954.

12. Adjournment.

There being no further business, the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

RLC:H

[fol. 406]

GOVERNMENT'S EXHIBIT 86

Minutes of Meeting

Market Research and Promotion Committee

The Greenbrier

White Sulphur Springs, West Virginia

Sunday, May 16, 1954

Present:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Co., Inc., J. S. Algeo—Hazel-Atlas Glass Company, E. F. Ball—Ball Brothers Company, Inc., C. G. Bensing—Owens-Illinois Glass Company, E. J. Costa—Crown Cork and Seal Company, J. C. Feagley—Armstrong Cork Company, W. V. Fisher—Anchor Hocking Glass Corporation, J. S. Heuvel—Maryland Glass Corporation, G. A. Mengle—Brockway Glass Company, Inc., P. O'C. White—White Cap Company.

Absent:

F. H. May—Foster-Forbes Glass Company.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, S. F. Davis—Owens-Illinois Glass Company, S. B. DeMerell—Anchor Hocking Glass Corporation, Fred E. Fuller—GCMI General Counsel, V. L. Hall—GCMI, H. C. Herger—Pierce Glass Company, J. P. Levis—Owens-Illinois Glass Company, C. R. Megowen—Owens-Illinois Glass Company, Ford Sammis—Marketing Economist, F. H. Wright—GCMI.

1. Call to Order.

The meeting was called to order by the Chairman, Mr. F. B. Pollock, who presided. Mr. Cheney acted as Secretary.

2. Plans and Organization—Progress Report.

Mr. Bush Barnum, new GCMI Public Information Director, was introduced to the Committee, and Mr. Cheney's recommendations concerning plans for hiring a Packaging Economics Engineer capable of handling important, high level contacts, were approved by the Committee. With the exception of an Editor, to be hired later, this would complete the proposed organization.

3. Packaging Cost Studies—Beer and Soft Drinks.

Proposals were submitted by the Director of M. R. & I from three management engineering firms, for diagnostic [fol. 407] and cost studies covering the packing and distribution of beer and soft drinks in cans vs. One-Way bottles. A thorough discussion followed which disclosed the Committee opinion to be that top priority should be given to a thorough diagnostic study of all phases of the merchandising and distribution of beer and soft drinks in One-Way bottles as compared to cans, with special emphasis on distributor activity and bottling house costs. A task group consisting of C. G. Bensinger, E. J. Costa, S. B. DeMerell, and G. A. Mengle was appointed by the Chairman to assist in the selection of an outside agency to handle this study.

4. Brochure of Charts and Statistics.

The Committee reviewed the dummy of a proposed brochure for glass company salesmen and for very limited distribution to business editors, giving the basic statistics on the glass container and other industries contained in "A Survey of the Market Problems of the Glass Container Industry" as presented by Mr. Cheney at Fort Lauderdale.

Photostatic copies were taken by the Committee members for further study—suggestions or additions to be submitted to the Director as soon as possible.

5. Plan for Retail Store Panels.

A plan for Retail Store Panels in Philadelphia and Los Angeles, which would furnish a means for continuing audits covering the relative sales of soft drinks in cans and bottles, and of tinned and glassed baby foods, was discussed.

The Director was authorized to proceed with a plan for such store panels, as proposed by the Ford Sammis organization on March 23, 1954.

6. Depth Survey Techniques.

Mr. Ford Sammis reviewed the results of the Depth Surveys recently completed, and played tape recordings of actual interviews for the Committee. The plans to present a report of these surveys at the membership meeting were approved.

7. Publicity.

The opportunity for constructive publicity and the need for correcting mis-statements concerning the industry were stressed by the Committee, and plans were approved to handle the basic requirements of this situation during the coming months prior to undertaking any broad program of product publicity and advertising, which may later be recommended. This activity will provide a means, under the present budget, for dealing with the immediate needs of the Soft Drink situation.

[fol. 408] 8. Joint Meeting with Soft Drink Manufacturers.

Representatives of all companies manufacturing soft drink bottles were then invited to join the meeting, and Mr. Ford Sammis gave a report of the Consumer and Dealer Surveys covering soft drinks in cans and bottles in the Philadelphia and California areas.

There was a lengthy discussion of the competition being offered by the soft drink can, and the need was expressed for earliest possible distribution of GCMC drawings covering recommended designs for One-Way carbonated beverage bottles, and also for material in pamphlet form setting forth the advantages of glass bottles.

It was suggested that the Trustees be requested to set up a special committee of soft drink bottle manufacturers to keep track of continuing developments in this field and to recommend action when needed. Mr. Cheney said he would convey this suggestion to the Board.

9. Adjournment.

There being no further business, the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

R.L.C.H.

[fol. 409] GOVERNMENT'S EXHIBIT 87

Minutes of Meeting

Market Research and Promotion Committee
GCMC Conference Room
New York, New York

September 22, 1954

Present:

F. B. Pollock, Chairman—Thatcher Glass Mfg. Co., Inc., J. S. Algeo—Hazel-Atlas Glass Company, E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, E. J. Costa—Crown Cork and Seal Company, Inc., J. C. Feagley—Armstrong Cork Company, W. V. Fisher—Anchor Hocking Glass Corporation, J. S.

Heisler—Maryland Glass Corporation, G. A. Mengle—
Brockway Glass Company, Inc., P. O'C. White—White Cap
Company.

Absent:

E. D. Easterby—Laurens Glass Works, Inc.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, S. B. De-
Merrell—Anchor Hocking Glass Corporation, Fred E. Ful-
ler—GCMI General Counsel, V. L. Hall—GCMI, H. W.
Kuni—GCMI, Ford Sammis—Marketing Economist, W. C.
Schade—Ball Brothers Company, Inc.

1. Call to Order.

The meeting was called to order by the Chairman, Mr.
F. B. Pollock, who presided. Mr. Cheney acted as Secre-
tary.

The Chairman stated that this meeting was called espe-
cially to review the results of the Market Research program
to date; that the director and staff of the Market Research
and Promotion Division had been asked to make "recom-
mendations that might be undertaken which
looked promising" as instructed in the resolution establish-
ing the division; that division studies indicated recom-
mendations; that the purpose of the meeting was Committee
consideration of the division recommendations; that, in
consequence, time would not be taken for detailed division
activities since the previous meeting on August 12, 1954.

2. Minutes of Previous Meeting.

The minutes of the meeting held on August 12, 1954 were
approved as issued by the Secretary.

[fol. 410] **3. Consumer and Dealer Attitude Surveys.**

Ford Sammis presented information on (1) his depth
survey, (2) his Philadelphia and California soft drink
studies and (3) the nationwide consumer and dealer survey.

The last named is an extremely broad undertaking, in-
volving 10,000 consumers, 2000 retailers and a total of some

3,000,000 individual answers to be collated. In the course of the time available, it was only possible for Mr. Sammis to give highlights of his extensive program. This material was also covered in confidential, numbered reports issued only to Committee members and entitled "National Container Survey, Preliminary Summary, September 22, 1954".

4. Beer Container Diagnostic Study.

Three representatives of McKinsey & Company,—Everett Smith, William Graham and David Fox,—presented an oral report of their recent beer survey. Written reports will be submitted to Committee members at a later date.

5. Milk Bottle Test Markets Results.

R. L. Cheney presented summaries of recent test campaigns in Buffalo and Milwaukee and written reports were given to the Committee.

6. Recommended Industry Program.

Mr. Cheney then presented a 25 page report to the Committee entitled "A Recommended Program for the Glass Container Industry" which included the following sections:

Forward
Competitive Industries
Industry Trends
Defining the Problem
Aims and Objectives

A Total Impact Program including:

Market Research
Public Information
Consumer Advertising Program
Choosing an Agency
Merchandising and Trade Promotion
Conclusion

After full discussion, the following resolution was duly moved, seconded and unanimously adopted:

Resolved, that the Committee on Market Research and Promotion recommends to the Trustees that the percentage of assessment which the Budget Committee has

[fol. 411] proposed to finance all regular activities of the Standing Committees, amounting to 14/100 of 1% be augmented by 16/100 of 1% to provide funds for an advertising and promotional program as submitted by the Committee herewith, making the membership dues for the year 1955 total 30/100 of 1% of net sales; Resolved Further, that the Committee recommends to the Trustees that at the time the budgets for 1956 and 1957 are under consideration there be included an assessment of 16/100 of 1% to finance advertising and promotional activities.

Respectfully submitted, R. L. Cheney, Secretary.

RLC:CH

[fol. 412]

GOVERNMENT'S EXHIBIT 88

Minutes of Meeting

Market Research and Promotion Committee
The Broadmoor
Colorado Springs, Colo.

October 24, 1954

Present:

F. B. Pollock, Chairman—Thatcher Glass Mfg. Co., Inc., J. S. Algeo—Hazel-Atlas Glass Company, E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, E. J. Costa—Crown Cork and Seal Company, Inc., J. C. Feagley—Armstrong Cork Company, J. S. Heuissler—Maryland Glass Corporation, G. A. Mengle—Brockway Glass Company, Inc., P. O'C. White—White Cap Company, E. D. Easterby—Laurens Glass Works, Inc.

Absent:

W. V. Fisher—Anchor Hocking Glass Corporation.

Present from West Coast Sub-Committee:

K. C. White, Chairman—Owens-Illinois Glass Company, F. L. Bower—Hazel-Atlas Glass Company, R. H. Dallas—Maywood Glass Company, F. W. McDonald—Glass Con-

tainers, Inc., William Simkins—Letchford-Marble Glass Company.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, S. B. DeMerrell—Anchor Hocking Glass Corporation, Fred E. Fuller—GCMI General Counsel, V. L. Hall—GCMI, Ford Sammis—Marketing Economist, W. C. Schade—Ball Brothers Company, Inc., G. F. Rieman—Ball Brothers Company, Inc., P. R. Goetz—Ball Brothers Company, Inc.

1. Call to Order.

The meeting was called to order by the Chairman, Mr. F. B. Pollock, who presided. Mr. Cheney acted as Secretary.

2. Minutes of Previous Meeting.

The minutes of the meeting held on September 22, 1954 were approved as issued by the Secretary.

[fol. 413] 3. Review of Proposed Presentation to the Membership.

Mr. Cheney then reviewed a 25 page report entitled "A Recommended Program for the Glass Container Industry" dated October 24, 1954, which was the same as the document of the same name dated September 2, 1954 which had been reviewed by the Committee at its previous meeting, except that two or three sections had been considerably condensed since the speakers at the following days' membership meetings would cover the sections orally and with charts.

He outlined the plan of the Market Research and Promotion Department for presenting the Committee's recommendation to the Industry at the meetings on the two following days, including the provision for a report illustrated by charts by Ford Sammis covering the results of the major marketing research survey that had recently been completed.

After discussion, upon motion duly made and seconded the following resolution was unanimously adopted:

Resolved, that Mr. Cheney be authorized to present "A Recommended Program for the Glass Container Industry"

as reviewed with this Committee today, to the Membership at its meetings on October 25 and October 26 with the proviso that he precede it with a statement to the effect that this recommended program represents the best thinking of the Committee at the present time in the light of present market research findings and industry problems as they currently appear, but that it should not be assumed that the execution of the plan would necessarily follow the recommendation as presented here except in general outline, but that if approved by the Membership any plan as put into effect would be with the approval of the Committee and the Board of Trustees.

4. West Coast Marketing Problems.

The members of the West Coast Sub-Committee then reviewed the marketing problems of the glass container industry in the West Coast area. Highlighted were the fact that the position of the 1-way beer bottles had declined in that market; intensive competition has been encountered from canned soft drinks, particularly in the Los Angeles and San Francisco areas; a second packer has switched 100% to glass for baby food in the California market and the two glass-packed baby foods in that area are advertising heavily and are apparently gaining in market position; and joint efforts between the bottle manufacturers and the California Nevada Manufacturers of Carbonated Beverages were reported to have been quite successful in meeting the advent of cans in the Los Angeles market.

[fol. 414] 5. Next meeting.

It was decided to hold the next meeting of the sub-committee at 8:30 A. M. Wednesday morning, October 27, 1954.

6. Adjournment.

There being no further business, the meeting was adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

Minutes of Meeting

Market Research and Promotion Committee
The Broadmoor
Colorado Springs, Colo.

October 27, 1954

Present:

F. B. Pollock, Chairman—Thatcher Glass Mfg. Co., Inc.,
J. S. Algeo—Hazel-Atlas Glass Company, E. F. Ball—Ball
Brothers Company, Inc., C. G. Bensinger—Owens-Illinois
Glass Company, E. J. Costa—Crown Cork and Seal Com-
pany, Inc., J. C. Feagley—Armstrong Cork Company, J. S.
Heuveler—Maryland Glass Corporation, G. A. Mengle—
Brockway Glass Company, Inc., P. O'C. White—White Cap
Company, E. D. Easterby—Laurens Glass Works, Inc.

Absent:

W. V. Fisher—Anchor Hocking Glass Corporation.

Present from West Coast Sub-Committee:

K. C. White, Chairman—Owens-Illinois Glass Company,
F. L. Bower—Hazel-Atlas Glass Company, R. H. Dallas—
Maywood Glass Company, F. W. McDonald—Glass Con-
tainers, Inc., William Simkins—Litchford-Marble Glass
Company.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, S. B.
DeMerell—Anchor Hocking Glass Corporation, V. L. Hall
—GCMI, Ford Sammis—Marketing Economist, W. C.
Schade—Ball Brothers Company, Inc., G. F. Rieman—Ball
Brothers Company, Inc., P. P. Goetz—Ball Brothers Com-
pany, Inc.

1. Call to Order.

The meeting was called to order by the Chairman, Mr.
F. B. Pollock. Mr. Cheney acted as Secretary.

2. Selection of an Advertising Agency.

With the approval by the members on a previous day of "A Recommended Program for the Glass Container Industry" and the report of the Budget Committee, the Chairman [fol. 416] stated that he thought it was in order to authorize the selection of an advertising agency by the Director of Market Research and Promotion. He stated that the Director had requested the appointment of a special three-man sub-committee of advertising managers to aid in this selection.

Therefore, after discussion, upon motion duly made and seconded the following resolutions were unanimously adopted:

Resolved, that the Director of Market Research and Promotion proceed with the selection of an advertising agency in line with the plans for such selection outlined by him to the Committee this day, and

Resolved, that Anchor Hocking Glass Corporation, Armstrong Cork Company and Owens-Illinois Glass Company be requested to supply the services of their advertising managers to act as a special Advisory Committee to the Director of Market Research and Promotion in connection with this selection.

3. Soft Drink Industry Talks.

The Director was instructed to circulate his talk which is to be made at several meetings of soft drink manufacturers to all members of G.C.M.I. He was also instructed to prepare a story for the brewing industry and for the dairy industry, setting forth the facts about those two industries which were incorporated in his soft drink talk.

4. Financial Analysts Program.

The Director was instructed to send copies of the material furnished to the financial analysts at New York and Boston to the financial analysts of the various insurance companies throughout the country.

5. Recommendations for use of the labor press.

Mr. Cheney then read a letter from the Glass Bottle Blowers Association recommending that a substantial amount of the advertising funds of G.C.M.I. be devoted to the labor press. It was the opinion of the Committee that it was too early to consider this matter at this time and the Director was asked to so advise the union.

[fol. 417] 6. N. C. A. Promotional Program.

The Director was instructed to refer to the Glass Container Task Group of the Market Research and Promotion Committee any questions or problems involved in cooperation with the N. C. A. promotional program.

7. Further report of West Coast activities.


Members of the West Coast Sub-Committee then continued a report of the marketing situation facing the glass container industry on the West Coast. The discussion was principally concerned with the opportunities for the sale of 1-way bottles for the carbonated beverage industry on the West Coast and it was reported that there seemed to be one or two success stories in the making for this container in southern California.

It was the consensus of the meeting that the office of the Market Research and Promotion director should keep more closely in touch with the West Coast Sub-Committee, for an interchange of views and adequate communication covering activities of the parent committee and the sub-committee, and of the office of the Director.

8. Adjournment.

There being no further business, the meeting was adjourned.

Respectfully submitted, R. L. Cheney, Secretary



[fol. 418]

GOVERNMENT'S EXHIBIT 90

Minutes of Meeting

Market Research and Promotion Committee
GCMI Conference Room
New York, N. Y.

March 1, 1955

Present:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Company, Inc., J. S. Algeo—Hazel-Atlas Glass Company, E. F. Ball—Ball Brothers Company, Inc., E. J. Costa—Crown Cork and Seal Company, Inc., W. V. Fisher—Anchor Hocking Glass Corporation, G. A. Mengle—Brockway Glass Company, Inc., P. O'C. White—White Cap Company.

Absent:

C. G. Bensinger—Owens-Illinois Glass Company, E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company, J. S. Heuisler—Maryland Glass Corporation.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, S. F. Davis—Owens-Illinois Glass Company, S. B. DeMerell—Anchor Hocking Glass Corporation, J. A. Giddings—Brockway Glass Company, Inc., R. H. Hetzel—Armstrong Cork Company.

1. Call to Order.

The meeting was called to order by the Chairman, Mr. F. B. Pollock. Mr. Cheney acted as Secretary.

2. Minutes of Previous Meetings.

The minutes of the meetings held October 24, 1954 and October 27, 1954 were approved as issued by the Secretary.

3. 1955 Advertising and Promotion Plan.

The following representatives of Kenyon & Eckhardt,

Inc., GCMI's advertising agency, were then invited to join the meeting and were introduced by Mr. Cheney:

D. J. Maggini, Account Supervisor
 R. B. Shirey, Account Executive
 Miss Leslie Munro, Creative Chief
 G. M. Ule, Research Director
 Hal Davis, Director of Publicity & Promotion
 J. P. Braun, Media Director

[fol. 419] The representatives of the agency then presented a "1955 Advertising Recommendation for the Glass Container Manufacturers Institute," and copies of this plan were distributed to those present and later mailed to absentees. Proposed advertisements were presented partly in preliminary photographs and partly in rough art work form.

After answering questions from the Committee members the representatives of the advertising agency left the meeting.

Mr. Cheney then explained that the plan as presented today was a modification of a plan reviewed the week before by an advisory group of advertising managers from the industry. Their many very helpful criticisms, suggestions and recommendations had been taken into account in bringing the plan to its present form although because of differing views on certain points and because of the need of accommodating the overall desires of the industry as he understood them, the Director alone assumed responsibility for the plan in its present form.

Mr. Cheney then presented the budget covering the plan presented by the agency which was as follows:

Budget

Advertising and Promotion

National Magazines (Space & Production) . . .	\$ 513,000
Television (Space & Production)	188,000
Trade Papers	30,000
Labor Papers	20,000
Merchandising and Publicity	75,000
Local Market Campaigns	232,000
Contingencies	2,800

\$1,060,800

The Director then recommended that in addition to the advertising and promotion plan just covered, \$50,000 be appropriated for general publicity to be carried out under the direction of Bush Barnum, GCMI Public Information Director, and \$22,000 be appropriated to continue the milk bottle promotional program for the balance of 1955. With these additions the total budget for advertising, promotion and publicity is \$1,132,800 which was in conformance with the 1955 budget for GCMI as approved by the Board of Trustees and the members.

After many questions and considerable discussion of the plan as presented, upon motion duly made, seconded and unanimously carried, it was

Resolved, That the Market Research and Promotion Committee approve the plans for the 1955 advertising and promotion and publicity as presented by the Director of Market Research and Promotion and the advertising agency and authorizes the Director to proceed to work out the details and put the plan into action.

[Vol. 420] 4. Report of Beer Bottle Subcommittee Activities.

Mr. Cheney then reviewed the recent meeting of the Beer Bottle Sub-committee of this committee. He stated that the Board of Trustees had constituted this Beer Bottle Subcommittee as a subcommittee of the Committee of Market Research and Promotion, transferring it from the Committee on Container Design and Specifications since it appeared that its activities would be henceforth in the field of market research and promotion.

The committee had met and received a report from the representatives of McKinsey and Company covering their study of the possibilities of duplicating the marketing success which the one-way beer bottle was enjoying in Baltimore to the Detroit market. After hearing the report it had been the consensus of the Beer Bottle Subcommittee that in the absence of basic changes in the marketing pattern of beer in the Detroit market that it would not be

possible to duplicate the Baltimore experience there. The Subcommittee felt that in the light of all studies made to date it was not clear what course GCMI should take in the promotion of glass bottles for beer and it invited the parent committee to review the McKinsey and Company report and had recommended that the Director ask the Kenyon & Eckhardt research and marketing people to study this problem and see if recommendations for action could be developed.

The great importance of the beer container market to the glass container industry was stressed and the Director was urged to take every possible step towards developing activity in this connection which would offer promise of success.

5. 1955 Market Research Plans.

Mr. Cheney then presented plans for continuing the market research activities of the Institute in 1955, which plans were approved by the committee as submitted.

In this connection, upon motion duly made, seconded and unanimously carried, it was

Resolved, That the "Glass Container National Survey 1954—Summary" as presented by Ford Sammis to the membership meeting at Colorado Springs, and as shown to this committee in printed form be held at GCMI on a library loan basis to GCMI members.

6. Committee Directives.

As means of increasing the value of the GCMI advertising and promotion campaign to its members the Market Research and Promotion division was directed by the committee to:

- [fol. 421] 1. Send a summary of the Kenyon & Eckhardt report to the membership to inform them of the program.
2. Keep them advised of progress on the various parts of the plan.
3. Furnish the membership with advance proof of all

ads at least thirty days prior to their first appearance in the media.

4. Contact the advertising agencies of customer industries and associations of those industries, explaining our program endeavoring to obtain cooperation in their advertising.
5. Prepare and make available to the members in the necessary quantities material explaining the program, including advance proof of the advertising, and all other useful information about it that could be placed in the hands of the sales people in the industry for their use in merchandising the program in their contacts with the trade.

7. Adjournment.

There being no further business, the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 422]

GOVERNMENT'S EXHIBIT 91

Minutes of Meeting

Market Research and Promotion Committee
The Greenbrier
White Sulphur Springs, West Virginia

May 8, 1955

Present:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Company, Inc., J. S. Algeo—Hazel-Atlas Glass Company, E. F. Ball—Ball Brothers Company, Inc., C. G. Bensing—Owens-Illinois Glass Company, E. J. Costa—Crown Cork and Seal Company, Inc., E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company, W. V. Fisher—Anchor Hocking Glass Corporation, G. A. Mengle—Brockway Glass Company, Inc., P. O'C. White—White Cap Company.

Absent:

J. S. Heuisler—Maryland Glass Corporation.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, S. B. De-Merrell—Anchor Hocking Glass Corporation, Fred E. Fuller—GCMI General Counsel, V. L. Hall—GCMI, F. B. Hess—Brockway Glass Company, Inc., M. R. Hellrung—Owens-Illinois Glass Company, P. I. Heuisler, Jr.—Maryland Glass Corporation, F. W. McDonald—Glass Containers, Inc., R. H. Roper—Laurens Glass Works, Inc., F. H. Wheaton—Wheaton Glass Company, F. H. Wright—GCMI.

1. Call to Order.

The meeting was called to order by the Chairman, Mr. F. B. Pollock. Mr. Cheney acted as Secretary.

2. Advertising and Promotion Program.

The Chairman stated that as directed by the committee at its last meeting the Market Research and Promotion department has issued Advertising and Promotion Bulletin No. 1 dated April 18, 1955 giving the industry in complete, but condensed outline form the details of the GCMI 1955 Advertising and Promotion program which had been approved by this committee at its previous meeting. He then asked Mr. Cheney to review the progress that had been made in this program since the last meeting which he did. He told of the working relations that have been developed with Kenyon & Eckhardt, the advertising agency, and pointed out that they had developed in a very satisfactory [fol. 423] way and that he was very pleased with the energy and enthusiasm with which they were attacking our problems and with the quality of the personnel assigned to GCMI.

Slides were shown covering the photographic art work and layouts of the first four in the series of national magazine advertisements (covering milk, two soft drinks and baby foods). A slide was shown covering tentative photographic art work for the fifth advertisement covering staples, and a slide was shown covering artist layouts for the ad covering cosmetics.

Each of these was discussed and many suggestions and recommendations were submitted for the improvement of the advertisements. Now that the program has been launched and enough lead time will be available to do so, Mr. Cheney was asked to submit ads in advance to informed members of the industry for their advice.

Concerning the staples ad it was the consensus that the catsup was too dark in color, the mustard too orange in color, the catsup bottle looked too unrealistic and should contain more catsup and should give some evidence of having been poured from with residual catsup on the inferior upper side walls. It was suggested that the blue background be changed as it gave the glass a green cast which is undesirable in catsup bottles.

In the cosmetics ad it was pointed out that the artist's conception showed bottles that were too large and not cosmetic type in appearance, and it was recommended that the most distinctive possible bottles be included while still avoiding private molds. A lotion bottle should be included as well as an opal jar and a fancy perfume. It was suggested that GCMI ask cosmetic bottle manufacturers to submit samples of appropriate bottles for the advertisement. The theme of the ad was thought to be very good.

In discussing the labor press to be used for GCMI advertising, it was the consensus of the committee that GCMI funds could not be used for advertisements in the Retail Clerk's publication over the signature of one of the labor unions in the glass container industry. If this magazine will not accept advertising from other than a labor union, it could not be included in any way in GCMI's program.

The Market Research and Promotion division was instructed to furnish the industry with a list of the dates on which the GCMI commercials would appear on the NBC "Home Show" television show.

3. Presentation of Committee Report—May 9 and 10.

Mr. Cheney then outlined his proposed plan for presenting the report of this committee to the GCMI membership on the following two days as outlined in the printed program for those meetings and the plans were approved by the committee.

[fol. 424] 4. Marketing Research Activity.

Mr. Cheney then outlined the proposed plans for marketing research activities in 1955 including laboratory tests comparing glass with competitive container materials, 1955 consumer surveys, the means of measuring campaign results, and proposals for breaking down the data of the 1954 survey. These plans were approved.

5. Beer Bottle Subcommittee Activity and Plans.

The schedule for this meeting did not allow time for presentation to this committee of the McKinsey and Company report which had been reviewed by the Beer Bottle Subcommittee. However, the problems of the industry in this area have been submitted to Kenyon & Eckhardt for their study and recommendations as to ways and means to attack this problem.

6. Soft Drink Industry Reaction to GCMI Activity.

Mr. Cheney reported that reaction to his talks to eight state associations and the national convention of ABCB seemed to have been favorable. The headquarters of ABCB have been informed of GCMI's advertising and promotion plans for 1955 and have reacted very enthusiastically, inviting him and Mr. Barnum to present these plans to a meeting of virtually all of the state presidents and secretaries of bottling industry associations and officers and directors of ABCB, at their meeting in Washington on the afternoon of May 9. The committee approved this presentation.

7. Statement and Recommendations from a GCMI Member.

The Chairman stated that he had invited Mr. Frank H. Wheaton, Jr. to present a statement and recommendations to this committee. Mr. Wheaton pointed out that the market research findings of the Market Research and Promotion department clearly revealed the need for more technical research on the part of the glass container industry and the improvement of its product in order to maintain its competitive position with other packaging industries. He presented his views as to how best some of this research

could be carried out by members of the industry. The industry members expressed much interest in the subject, and a willingness to explore individually ways and means of carrying out this research, but it was the consensus that it was beyond the jurisdiction of this committee and therefore a subject on which this committee could not take any specific action.

8. Adjournment.

There being no further business, the meeting was adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 425]

GOVERNMENT'S EXHIBIT 92

Minutes of Meeting

Market Research and Promotion Committee

GCMI Conference Room

New York, N. Y.

September 28, 1955

Present:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Company, Inc., J. S. Algeo—Hazel-Atlas Glass Company, E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, J. C. Feagley—Armstrong Cork Company, W. V. Fisher—Anchor Hocking Glass Corporation, J. S. Heisler—Maryland Glass Corporation, G. A. Mengle—Brookway Glass Company, Inc., P. O'C. White—White Cap Company.

Absent:

E. J. Costa—Crown Cork and Seal Company, Inc., E. D. Easterby—Laurens Glass Works, Inc.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, S. B. DeMerell—Anchor Hocking Glass Corporation, Fred E. Fuller—GCMI General Counsel, V. L. Hall—GCMI.

1. Call to Order.

The meeting was called to order by the Chairman, Mr. F. B. Pollock. Mr. Cheney acted as Secretary.

2. In Memoriam, Joseph M. Nester.

The meeting was opened with a period of silence, in memory of the late Joseph M. Nester as an expression of the deep affection and regard in which he was held by all members of the Committee, and in gratitude for the outstanding leadership he had given to the Institute and to the Committee during his year as president of GCMI.

3. Proposed Advertising and Promotion Program for 1956.

The representatives of Kenyon & Eckhardt, Inc. who were to present the agency's recommendations for 1956 advertising and promotion campaign for GCMI then joined the meeting. Those present from the agency were:

W. B. Lewis, President

R. B. Shirey, Account Executive,

G. M. Ulé, Research Director

J. P. Braun, Media Director

Hal Davis, Director of Publicity and Promotion

Miss Leslie Munro, Creative Chief

[fol. 426] The representatives of Kenyon & Eckhardt then presented the "1956 Advertising Recommendation for the Glass Container Manufacturers Institute." Copies of this presentation were distributed to those present and later mailed to absentee committee members. The presentation consisted of the following parts:

I The Problem

II Media Recommendation

III Promotion

IV Summary of Costs

V Copy Planning

VI Special Recommendations

Following the presentation committee members asked many questions of the agency representatives and furnished them with background information on the glass container industry and its relation with the various markets for its products which might have been overlooked in the preparation of the advertisements. In addition to questions and suggestions on details of the art work and copy of the advertisements, particular points questioned were the use of Parents' Magazine with its high cost per thousand of readers, the advisability of using the juice ad at all in its present approach, and the need for much more emphasis on work with the supermarket and other retailers.

On this latter point it was the consensus of the committee that one of the biggest problems of the glass container industry was the negative attitude of the supermarket operators and other retailers towards products packed in glass. Great emphasis was placed upon the need for sufficient activity directed toward the retail trade to at least change the unfriendly attitude towards glass to a neutral one.

Following this the representatives of the agency retired and the committee meeting continued.

4. Proposed Budget for 1956.

Mr. Cheney then presented a proposed budget for 1956, copy of which is attached to these minutes. It covers:

A—Operating Expenses and Market	
Research Activities	\$ 238,300
B—Advertising and Promotion Expenses ..	1,200,784
C—That portion of Advertising and Promotion Expenses as recommended by Kenyon & Eckhardt	
	1,102,784

Under B, Advertising and Promotion Expenses, it was pointed out that \$50,000 was included for General Publicity Expense, to be carried out under the direction of Mr. Bush Barnum in his capacity as Public Information Director. It is proposed that this fund be used to develop a motion picture for GCM which could be used for presentation to men's and women's clubs, association meetings, conventions, etc. and so designed that it could be used on

television as a public service or educational feature, in whole and in part. In addition, a budget of \$48,000 was included for continuation of the Milk Bottle Promotional Program along present lines.

[fol. 427] 5. Beer Bottle Subcommittee Activity.

The Director of Market Research and Promotion reported that the Subcommittee on Beer Bottles had approved a plan for the research, promotion, and merchandising personnel of Kenyon & Eckhardt to make a thorough study of beer distribution in a typical medium-sized market with a view to developing and later testing in that market a plan for promoting the use of glass bottles for beer. Funds for this purpose (\$50,000) were included and not yet expended, in the 1955 budget, and funds for extension of any successful resulting pattern to one or two additional markets were available in accumulated surplus of marketing funds carried forward from 1954.

6. Approval of Plans and Budgets.

Following this there was a further discussion of the plan presented by the agency, the budgets and related material. Among the questions raised but left for further consideration by the Market Research and Promotion department were the advisability of including a beer ad in the magazine schedule, the possibility of finding other media for beer ads, the possibility of using the labor papers for the beer ads, and a question as to value of magazine advertising during the month of August. On the latter point the Director was asked to check readership studies with the agency and see if it would be advantageous to drop this month and use the money elsewhere.

The Chairman stated, and the Committee was in agreement that the last section, VI—"Special Recommendations"—deserved and required much attention from the Market Research and Promotion department. Mr. Cheney stated that he understood that paragraph 2, "Product Improvement," did not come within the jurisdiction of this committee or its budget but that he understood that individual members were expanding the technical research involved and that plans for making research facilities along these

lines available to the industry as a whole were being discussed and considered by the industry.

He said that paragraph 1, "Product Research," paragraph 3, "Merchandising Aids," and paragraph 4, "Merchandising Facts" could be handled within the market research activities of the department and that the budget included \$20,000 which could be applied to these activities.

It was the consensus of the committee that these activities justified greater attention, and the Director was asked to develop specific plans to cover these areas, with special emphasis on item 4, and to reappraise the overall budget with a view to the possibility of assigning some of the funds now earmarked for national magazine advertising to this area, if necessary.

Chairman Pollock said he felt the committee should realize that the 1956 plan devotes its full budget for advertising to national media and does not include any local programs or promotions as was previously planned. After further discussion of the plan and budget, upon motion [for 428] duly made, seconded, and unanimously carried, it was

Resolved, That the Market Research and Promotion Committee approve the proposed budget dated September 28, 1955, as submitted, subject to the availability of funds from that portion of members' dues representing 16/100 of 1% of dollar sales to cover that portion of the budget designated "B—Advertising and Promotion"; and

Resolved further, That they approve the basic plan of media advertising, promotion and merchandising; and

Resolved further, That after further study, portions of the media budget may be applied to Section VI of the agency recommendation entitled "Special Merchandising Recommendations"; and

Resolved further, That diversion of funds for this purpose, if any, be recommended to the next scheduled meeting of the Market Research and Promotion Committee which is to be held at Miami Beach in November, prior to the membership meeting.

7. Invitation to Address ABCB Convention.

Mr. Cheney reported that he had been invited to make a brief talk at the ABCB Convention at Miami on November 16 concerning GCMI advertising and promotion plans and the general subject of soft drinks in glass bottles. The committee approved his making this talk and authorized Mr. Cheney to announce at that time that GCMI would have an advertising and promotion program in 1956 which would include soft drinks in glass bottles.

8. Committee Report to GCMI Membership Meeting.

It was proposed that this committee make a report to the membership on the morning of Wednesday, November 30, which would include an introduction by Chairman Pollock, a review of 1955 advertising and promotion activities by R. L. Cheney, a report of the 1955 nationwide consumer attitude survey by Ford Sammis, and a presentation of the advertising and promotion program for 1956 by R. L. Cheney, and R. B. Shirey and Miss Leslie Munro of Kenyon & Eckhardt, Inc.

On motion duly made, seconded and unanimously carried, it was

Resolved, That this committee should give the proposed report to the membership, subject to the approval of the Program Committee and the Board of Trustees.

9. Competitors' Advertising.

Examples of advertising by members of packaging industries which compete with the glass container industry were [fol. 429] discussed and it was the consensus of the committee that some of this advertising bordered on the unethical. It was hoped that this type of advertising would cease.

10. Next meeting.

It was decided to hold the next meeting of this subcommittee at the Fontainebleau Hotel at Miami Beach, Florida at 3:00 P.M. on Monday, November 28, 1955, preceding the

meeting of the Board of Trustees which is to be held at 5:00 P. M. that afternoon.

11. Adjournment.

There being no further business, the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 430]

GOVERNMENT'S EXHIBIT 93

Proposed Budget for 1956

Market Research and Promotion Division

Glass Container Manufacturers Institute, Inc.

September 28, 1955

[fol. 431]

A

Market Research and Promotion Division
Operating Expenses and Market Research Activities

Operating Expenses	1955 Budget	1956 Budget
Salaries	\$ 80,000	\$ 84,000
Rent	12,800	12,800
Stationery & Supplies	5,000	6,000
Postage	3,000	5,000
Telephone & Telegraph	4,000	5,000
Travel & Maintenance	15,000	15,000
Publications & Services	1,000	1,500
Printing & Mailing Expense	15,000	15,000
Committee Meeting Expense	2,000	2,000
Market Research Activities		
Retainer-Market Consultant	12,000	12,000
Research & Surveys	60,000	60,000
Contingencies	22,200	20,000
Total	\$232,000	\$238,300

[fol. 432]

B

Advertising and Promotion

	1955 Budget	1956 Budget
Publicity (General—Motion Picture)	\$ 50,000	\$ 50,000
Milk Bottle Promotional Program	22,000	48,000
Advertising & Promotion		
As recommended by Kenyon & Eckhardt (See Schedule C)	1,058,000	1,102,784
Contingencies	2,800	
	\$1,132,800⁽¹⁾	\$1,200,784⁽²⁾

Revenue @ 16/100 of 1% is estimated.

(1) to provide \$1,100,000 in 1955.

(2) to provide \$1,133,333 in 1956.

[fol. 433]

C

Advertising and Promotion as recommended by Kenyon & Eckhardt, Inc

Advertising

National Magazines

Space.....	\$852,784
Trade Papers.....	60,000
Labor Publications.....	25,000
Production.....	75,000

Total Media.....\$1,012,784

Promotion and Publicity

Home Economics & Publicity Service.....	45,000
Media Merchandising.....	10,000
Monthly Merchandising Mailer.....	30,000
Reserve.....	5,000

Total Promotion and Publicity.....90,000

Grand Total.....\$1,102,784

[fol. 434]

GOVERNMENT'S EXHIBIT 94

Minutes of Meeting

Market Research and Promotion Task Committee
 GCMI Conference Room
 New York, New York

November 2, 1955

Present:

J. S. Algeo—Hazel-Atlas Glass Company, S. B. DeMerell—Anchor Hocking Glass Corporation, W. H. Ellis—Lamb Glass Company, The, John H. Funkey—Carr-Lowrey Glass Company, James A. Giddings—Brockway Glass Company, Inc., Kenneth Hay—Ball Brothers Company, Inc., Roger H. Hetzel—Armstrong Cork Company, P. I. Heuveler, Jr.—Maryland Glass Corporation, P. S. Holmquest—Thatcher Glass Manufacturing Co., Inc., R. H. Roper, Jr.—Laurens Glass Works, Inc., Kevin Solon—Owens-Illinois Glass Company.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI.

1. Call to Order.

The meeting was called to order by R. L. Cheney who requested that a chairman be selected. Upon a motion duly made and seconded, Mr. Hetzel was unanimously elected chairman.

2. Purpose of Meeting.

Mr. Cheney outlined the purpose of the meeting: to review the 1956 Advertising and Promotion Program.

3. 1956 Advertising and Promotion Program.

Mr. Cheney then outlined the 1956 program and presented the following schedule:

February	Instant Coffee	Ladies' Home Journal McCall's
March	Fruits	Ladies' Home Journal Good Housekeeping Family Circle Woman's Day
April	Household Chemicals	McCall's Good Housekeeping Family Circle Woman's Day
[fol. 435]		
May	Milk	Ladies' Home Journal McCall's Good Housekeeping Family Circle Woman's Day
June	Soft Drinks	Ladies' Home Journal McCall's Good Housekeeping Family Circle Woman's Day
July	Beer	McCall's Family Circle Woman's Day
August	Soft Drinks	Ladies' Home Journal Good Housekeeping Family Circle Woman's Day

September	Baby Food	Ladies' Home Journal McCall's Good Housekeeping Family Circle Woman's Day
October	Juice ?	Ladies' Home Journal McCall's Good Housekeeping Woman's Day
November	Cosmetic	Ladies' Home Journal Good Housekeeping McCall's Family Circle

Roughs of the ten proposed advertisements were next gone over one at a time. Each was considered from the following viewpoints: General approach based on sales potentials and sales problems of the industry; artwork and copy approach; containers used; closures used; other props; other details including labels, quantity of product, etc.

4. Merchandising of the Advertisements.

Merchandising of the advertisements was next discussed. Points covered included lead time to members, lead time to packers, best means of approach in each instance, etc. It was agreed that a twelve-week lead time to members was most advisable, and that this timetable would be established as early in the new year as possible.

[fol. 436] Retailer advertising and promotion, beer bottle plans, promotion and publicity and home economics were next outlined by Mr. Cheney and discussed by the Committee.

5. Next Meeting.

The next meeting was tentatively set for early February.

Respectfully submitted R. L. Cheney, Secretary.

[fol. 437]

GOVERNMENT'S EXHIBIT 95

Minutes of Meeting

Market Research and Promotion Committee

GCMI Conference Room

New York, New York

September 26, 1956

Present:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Company, Inc., J. S. Algeo—Hazel-Atlas Glass Company, E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois, S. B. DeMerell—Anchor Hocking Glass Corporation, T. S. Gallagher—Crown Cork & Seal Company, Inc., J. S. Heusler—Maryland Glass Corporation, P. Malloy—Crown Cork & Seal Company, Inc., G. A. Mengle—Brockway Glass Company, Inc., P. O'C. White—White Cap Company.

Absent:

E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company.

Others Present:

Bush Barnum—GCMI, J. B. Carroll—GCMI, R. L. Cheney—GCMI, V. L. Hall—GCMI, D. L. Keys—Kenyon & Eckhardt, Inc., H. W. Kuni—GCMI, R. B. Shirey—Kenyon & Eckhardt, Inc.

1. The reading of the minutes of the preceding meeting on May 20, 1956 was waived.

2. The recommended advertising and promotion program for 1957 was presented by R. B. Shirey and D. L. Keys in behalf of Kenyon & Eckhardt. Divided into parts,

I. The problem

II. Advertising

A. Consumer Media

B. Copy Strategy

C. Labor Advertising

D. Trade Advertising

III. Publicity

- A. Consumer
- B. Trade

IV. Merchandising the Advertising

V. Merchandising Research

VI. Store-Wide "Glass Festival"

[fol. 438] the sixty-one page report was presented in detail by the agency representatives. Included were layouts of ten consumer ads for 1957 and accompanying copy. Presentation of the program and accompanying discussion took about three hours.

3. Mr. Cheney presented the proposed Market Research and Promotion budget for 1957.

4. After discussion, upon motion duly made, seconded and unanimously carried, it was

Resolved. That the Market Research and Promotion Committee recommend to the Board of Trustees the adoption of the 1957 advertising budget totaling \$1,236,775 as proposed.

5. At Mr. Cheney's request, the department was authorized to announce early phases of the 1957 program to bottlers and packers, and to proceed with the first three consumer and trade ads in the 1957 program so that time-tables could be maintained.

6. Mr. Cheney reported on various phases of the Virginia One-Way Beer Bottle Program, and discussion followed.

7. Beer studies in Syracuse were briefly reported by Mr. Cheney and the Committee was advised that the full report on the Syracuse study would be forthcoming from Kenyon & Eckhardt in the near future.

8. The advertising and promotion effort put behind soft drinks in the Los Angeles area was covered by Mr. Cheney.

9. The nationwide consumer and dealer attitude survey currently underway was also outlined by Mr. Cheney who stated a report of the results would be made by Mr. Sammis at the next Committee meeting.

10. It was agreed that the next meeting of the Market Research and Promotion Committee would be held at the

Phoenix Biltmore on Monday afternoon, November 12, at two o'clock and that the West Coast Subcommittee should be invited to attend.

11. There being no further business the meeting was adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 439]

GOVERNMENT'S EXHIBIT 96

Minutes of Meeting

Market Research and Promotion Committee
GCMC Conference Room
New York, New York
January 16, 1957

Present:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Company, Inc., E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois, J. C. Feagley—Armstrong Cork Company, J. M. Foster—Foster-Forbes Glass Company, T. S. Gallagher—Crown Cork & Seal Company, Inc., G. A. Mengle—Brockway Glass Company, Inc., P. O'C. White—White Cap Company.

Absent:

J. S. Algeo—Continental Can Company, Inc., Hazel-Atlas Glass Division, E. D. Easterby—Laurens Glass Works, Inc., W. V. Fisher—Anchor Hocking Glass Corporation, J. S. Heuissler—Maryland Glass Corporation.

Others Present:

Bush Barnum—GCMC, R. L. Cheney—GCMC, S. B. DeMerell—Anchor Hocking Glass Corporation, F. H. Wright—GCMC.

1. Call to Order.

The meeting was called to order at 9:30 A. M. by Chairman Pollock.

2. Minutes of Previous Meeting.

The minutes of the preceding meeting on November 12, 1956, were approved as issued by the secretary.

3. Los Angeles 1957 Soft Drink Program.

Mr. Cheney read the resolution passed by the M R & P Committee on November 12 and reported on current activities. Highlights of recent surveys in the Los Angeles area by Ford Sammis were presented.

4. Report of the Task Committee Meeting of January 15, 1957.

A. As recommended by the Task Committee, it was decided that no-deposit bottles would not be promoted in national advertising.

B. Baby Food Problem. Following extensive discussion, upon motion duly made, seconded and unanimously carried, the Task Committee recommendation of the preceding day was approved. This recommendation favored continuing [fol. 440] the past and present baby food jar promotion without extension.

C. RAB Insignia. Mr. Cheney reported that the Task Committee voted definitely against inclusion. No further action was taken.

5. Recommended Milk Bottle Program.

Following considerable discussion, action on a proposed milk bottle program was tabled.

6. Virginia Beer Bottle Program.

Mr. Cheney reported on the recent Virginia effort, adding that a meeting of the Beer Bottle Committee would be called on or about February 13, at which time the final results of the Syracuse Study and their recommendations would be presented by the agency.

7. Review of the Magazine Ads.

The 1957 ads were then reviewed. In various stages of production, each ad was commented on in turn. Reception, in the main, was favorable.

8. Merchandising Research.

Mr. Cheney reviewed the forthcoming merchandising research program in six stores—each of which does a $3\frac{1}{2}$ million dollar volume—in the Giant Food chain in and around Washington, D. C.

9. New Business.

It was suggested that GCMI should participate in the forthcoming Jamestown project.

There was a discussion of trends in the packaging of liquid detergents. Comments were made about disparagement of glass containers in the advertising of packers of ammonia in cans and of manufacturers of plastic containers. Mr. Cheney was requested to present our views to these advertisers.

10. Adjournment.

There being no further business, the meeting was adjourned at 12:30.

Respectfully submitted, R. L. Cheney, Secretary.

2090

[fol. 441]

GOVERNMENT'S EXHIBIT 97

Revised Budget For 1957

Market Research And Promotion Division
Glass Container Manufacturers Institute, Inc.

May 15, 1957

[fol. 442]

Revised

1957 G.C.M.I. Advertising and Promotion Budget
(Kenyon & Eckhardt, Inc.)

	Original Budget	Budget with Increases	Amount (over) or Under	Revised Budget
Consumer Magazine.....	\$ 743,500	\$ 810,100	(\$ 66,600)	\$ 724,100
Trade Advertising (incl. Glass Packer).....	105,000	102,000	3,000	77,800
Labor Press.....	30,000	30,000		30,000
Production (All Media).....	100,000	113,940	(13,940)	113,940
Promotion— Merchandising.....	85,275	85,275		73,175
Merchandising— Research.....	60,000	68,000	(8,000)	68,000
Contingency Fund.....		35,000	(35,000)	35,000
Total.....	\$1,123,775	\$1,244,315	(\$120,540)	\$1,122,015

[fol. 443]

Consumer Magazine Cancellations

Publication	Advertisement	Issue Date	Cost
Ladies' Home Journal	Soft Drink #1	July	\$26,411.25
Good Housekeeping	Baby Food	Sept.	19,340.00
Woman's Day	Soft Drink #2	Aug.	13,600.00
McCall's	Juice	Oct.	26,642.00
Family Circle	None	None	None
Budget Reduction.....			\$86,013.25

[fol. 444]

Trade Advertising Changes

Publication	Rate	Advertisement	Date	Total Budget Change
Chain Store Age	\$2,292.00	Baby Food	Aug.	\$ 4,584.00
Progressive Grocer	3,445.00	Cosmetics	Oct.	
Super Market	1,383.50	Soft Drink #2	July	6,800.00
Merchandising		Cosmetics	Oct.	
Nargus Bulletin	2,359.50	Soft Drink #2	July	2,767.00
Voluntary & Coop- erative Groups Magazine	1,165.00	Juices	Sept.	
Supermarket News	498.80	Beer	June	4,719.00
Food Topics	960.00	Juices	Sept.	2,330.00
		Beer	June	
		Juices	Sept.	
		Soft Drink #2	July 8	997.60
		Cosmetics	Sept. 30	
		Baby Food	Aug.	1,920.00
		Cosmetics	Oct.	
Budget Reduction.....				\$24,207.60

[fol. 445]

Revised

1957 Overall Advertising and Promotion Budget

	Original Budget	Revised Budget
Advertising and Promotion (Kenyon & Eckhardt, Inc.)	\$1,123,775	\$1,122,015
Publicity, General	65,000	79,000
Milk Bottle Promotional Program	48,000	48,000
Total	\$1,236,775	\$1,249,015

[fol. 446]

GOVERNMENT'S EXHIBIT 98

Minutes of Meeting

Market Research And Promotion Committee
White Sulphur Springs, West Virginia

May 20, 1957

Present:

J. M. Foster, Acting Chairman—Foster-Forbes Glass Company, E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company, J. S. Heuisler—Maryland Glass Corporation, G. A. Mengle—Brockway Glass Company, Inc., P. O'C. White—White Cap Company.

Absent:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Co., Inc., W. V. Fisher—Anchor Hocking Glass Corporation.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, S. B. DeMerrell—Anchor Hocking Glass Corporation, J. W. Fisher—Ball Brothers Company, Inc., Fred E. Fuller—General Counsel, W. J. Green—Thatcher Glass Manufacturing Co., Inc., V. L. Hall—GCMI, F. B. Hess—Brockway Glass Company, Inc., S. V. Tuttas—Crown Cork & Seal Company, Inc., F. H. Wright—GCMI.

1. Call to Order.

The meeting was called to order at 1:30 P. M. by Acting Chairman Foster who presided in Mr. Pollock's absence. Mr. Cheney served as secretary.

2. Minutes of the Previous Meeting.

Upon motion made, seconded and unanimously carried, the minutes of the previous meeting were approved as issued by the secretary.

3. Congratulatory Wire.

The secretary was directed to send a congratulatory telegram in the name of the full committee to Mr. and Mrs. Pollock on the birth of Robert Evans Pollock.

4. Cosmetic Ad.

Mr. Cheney explained that a transichrome version of the tenth and last consumer advertisement in the 1957 series would be on display in the general meeting room the [fol. 447] following morning. Members of the committee were asked to look at this transichrome and give their opinions to Mr. Cheney.

5. Report of Beer Bottle Subcommittee.

(A) Mr. Cheney discussed the Syracuse Study and presented the following recommendation unanimously approved by the Beer Bottle Subcommittee: Kenyon & Eckhardt does not recommend proceeding with the proposed marketing tests in the Syracuse area in the absence of a favorable economic relationship at the retail level, such as now exists in Maryland and Virginia. A motion was then made, seconded and unanimously carried that the Market Research and Promotion Committee accept the recommendation of the Subcommittee but that the matter be kept under advisement for future action at such time as the basic situation appeared favorable.

(B) Mr. Cheney discussed the forthcoming 1957 promotional program for one-way beer bottles in Virginia and the following recommendation approved by the Beer Bottle Subcommittee: That \$40,000 be appropriated from existent

funds to continue the Virginia program during the summer of 1957. A motion was then made, seconded and unanimously carried that the Market Research and Promotion Committee accept the recommendation of the Subcommittee.

6. Review of Progress and Costs of Advertising and Promotion Program.

Mr. Cheney next presented detailed studies of increased advertising costs and presented a revised budget for 1957, copy attached. Discussion followed.

7. Next Meeting.

Due to the early date of the 1957 Fall meeting, the next committee meeting was scheduled for Tuesday, August 27, 1957, at GCMI headquarters. At this time a recommended advertising program for 1958 will be presented for committee consideration.

8. Adjournment.

There being no further business, Acting Chairman Foster declared the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 448]

GOVERNMENT'S EXHIBIT 99

Minutes of Meeting

Market Research and Promotion Committee
GCMI Conference Room
New York, New York

August 27, 1957

Present:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Company, Inc., E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, J. C. Feagley—Armstrong Cork Company, J. M. Foster—Foster-Forbes Glass Company, P. O'C. White—White Cap Company.

Absent:

E. D. Easterby—Laurens Glass Works, Inc., W. V. Fisher—Anchor Hocking Glass Corporation, J. S. Heuissler—Maryland Glass Corporation, G. A. Mengle—Brockway Glass Company, Inc., S. V. Tutfas—Crown Cork & Seal Company, Inc., Dr. A. W. Wishart—Knox Glass, Inc.

Others Present:

Dash Barnum—GCMI, R. L. Cheney—GCMI, S. B. DeMerrell—Anchor Hocking Glass Corporation, J. W. Fisher—Ball Brothers Company, Inc., Walter Furlow—Knox Glass, Inc., V. L. Hall—GCMI, Anderson F. Hewitt—Kenyon & Eckhardt, Inc., Douglas L. Keys—Kenyon & Eckhardt, Inc., Robert B. Shirey—Kenyon & Eckhardt, Inc.

1. Call to Order.

The meeting was called to order at 10:00 A. M. by Chairman Pollock. Mr. Cheney served as secretary.

2. Minutes of Previous Meeting.

Upon motion made, seconded and unanimously carried, the minutes of the previous meeting were approved as issued by the secretary.

3. Promotional Recommendation.

Representatives of Kenyon & Eckhardt (Messrs. Lewis, Hewitt, Shirey and Keys) presented a 58-page recommendation for GCMI advertising and promotion in 1958.

Eleven rough layouts of 1958 advertisements, together with the tentative scheduling thereof, were also presented to the Committee for consideration.

[fol. 449]. Each layout was discussed in detail as were other phases of the proposed campaign.

The recommended media list called for eight four-color insertions in the following six consumer publications: McCall's, Ladies' Home Journal, Good Housekeeping, Family Circle, Woman's Day and Reader's Digest. The total recommended budget for advertising and promotion for 1958 amounted to \$1,666,353.

Following departure of agency representatives, the recommended program and budget (copy of which is attached to these minutes) were further discussed.

In answer to questions it was stated that elimination of Reader's Digest from the proposed schedule would reduce the budget by \$336,040 (space and production), leaving a total budget of \$1,330,313. It was further reported that this sum would fall within the amount of income that could be realized in 1958 by continuing the present rate of dues applicable to Advertising and Promotion (i.e., 16/100 of 1% of dollar sales out of total dues of 30/100 of 1%).

Upon motion duly made, seconded and unanimously carried, it was

Resolved, That the Market Research and Promotion Committee approves the proposed Advertising and Promotion Program for 1958 with the exclusion of Reader's Digest from the schedule, and recommends to the Board of Trustees the adoption of the 1958 budget totaling \$1,330,313, and it was

Resolved further, That the possibility of adding Reader's Digest to the consumer advertising schedule be further discussed at subsequent meetings of this committee.

4. Title Change.

Upon a motion duly made, seconded and unanimously carried, it was

Resolved, That the Market Research and Promotion Committee recommend to the Board of Trustees that Bush Barnum's title be changed from Director of Public Information to Director of Advertising and Public Information.

5. Next Meeting.

It was decided to hold the next meeting of the committee at The Cavalier, Virginia Beach, Virginia, on Monday afternoon, September 30, 1957, at 1:30 P. M.

6. Adjournment.

There being no further business, Chairman Pollock declared the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 450]

GOVERNMENT'S EXHIBIT 100

Proposed Budget for 1958

**Market Research and Promotion Division
Glass Container Manufacturers Institute, Inc.**

August 27, 1957

[fol. 451]

A

Advertising and Promotion as recommended by Kenyon & Eckhardt, Inc.

	1957 Revised Budget	1958 Budget	Amount (over) or under 1957
Advertising			
National Magazines			
Space	\$ 724,100	\$1,170,868	(\$446,768)
Trade Papers (Inc. Glass Packer)	77,800	57,485	20,315
Labor Publications	30,000	30,000	
Production (all media)	113,940	120,000	(6,060)
Total Media	\$ 945,840	\$1,378,353	(\$432,513)
Promotion, Publicity & Merchandising			
Publicity, Consumer & Trade	\$ 13,900	\$ 10,885	\$ 3,015
Educational Publicity		9,315	(9,315)
Merchandising the Advertising	42,775	47,300	(4,525)
Glass Festival	16,500	37,975	(21,475)
Merchandising Research	68,000	19,525	44,475
Total	\$ 141,175	\$ 125,000	\$ 16,175
Contingency	\$ 35,000	\$ 35,000	
Total	\$1,122,015	\$1,538,353	(\$416,338)

[fol. 452]

B

Total Advertising & Promotion

	1957 Revised Budget	1958 Budget	Amount (over) or under 1957
Advertising and Promotion			
(Kenyon & Eckhardt, Inc.)	\$1,122,015	\$1,538,353	(\$416,338)
Publicity, General	79,000	80,000	(1,000)
Milk Bottle Promotional Program	48,000	48,000	
Total	\$1,249,015	\$1,666,353	(\$417,338)

Advertising & Promotion Income

Dues Rate Year	16/100 of 1%	Increase
1955.....	\$1,108,218	
1956.....	\$1,172,728	+5.8%
1957.....	\$1,278,073	+8.9%
1958 (est.).....	\$1,333,333	+4.3%
Dues Rate Year	20/100 of 1%	
1958 (est.).....	\$1,666,666	

GOVERNMENT'S EXHIBIT 101

Minutes of Meeting

Market Research and Promotion Committee

The Cavalier

Virginia Beach, Virginia

September 30, 1957

Present:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Company, Inc., E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company, J. M. Foster—Foster-Forbes Glass Company, J. S. Heisler—Maryland Glass Corporation, G. A. Mengle—Brockway Glass Company, Inc., S. V. Tuttas—Crown Cork & Seal Company, Inc., P. O'C. White—White Cap Company.

Absent:

W. V. Fisher—Anchor Hocking Glass Corporation, Dr. A. W. Wishart—Knox Glass, Inc.

Others Present:

Bush Barnum—GCMI, R. W. Butler—Crown Cork & Seal Company, Inc., E. S. Campbell—Northwestern Glass Company, R. L. Cheney—GCMI, S. B. DeMerell—Anchor Hocking Glass Corporation, J. W. Fisher—Ball Brothers Com-

pany, Inc., Fred E. Fuller—General Counsel, R. E. Graham—Owens-Illinois Glass Company, W. J. Green—Thatcher Glass Manufacturing Company, Inc., V. L. Hall—GCMI, M. A. Hellrung—Owens-Illinois Glass Company, Ford Sammis—Ford Sammis & Company, J. G. Turk—GCMI, F. H. Wright—GCMI.

1. Call to Order.

The meeting was called to order at 1:45 P. M. by Chairman Pollock. Mr. Cheney served as secretary.

2. Minutes of Previous Meeting.

Upon motion made, seconded and unanimously carried, the minutes of the previous meeting on August 27, 1957, were approved as issued by the secretary.

[fol. 455] 3. Ratification of Previous Actions.

Because a quorum was not present at the August 27 meeting, absent committee members were polled by mail. Mr. Cheney announced that the two actions in question were thereby made unanimous.

4. Report of Task Committee Meeting.

Mr. Cheney reported briefly on the meeting of the Task Committee held at GCMI headquarters on September 11, 1957.

5. Future Committee Meetings.

It was suggested by Mr. Cheney, and approved by the committee, that the committee meetings be scheduled as follows in 1958: first, Advertising Advisory Committee; second, Task Committee; third, Market Research and Promotion Committee. The change makes it possible to present plans to the Task Committee prior to final presentation to the parent committee.

6. 1958 Advertising Program.

(a) The following schedule of consumer advertisements for 1958 was presented and approved:

February—Drugs

March—Coffee

April—Household Chemicals

May—Soft Drink #1 and Beer
 June—Soft Drink #2
 July—Spices
 August—Baby Foods
 September—Milk
 October—Applesauce
 November—Jam and Peanut Butter

(b) Roughs of five ads either revised or new to the committee were presented on slides and approved.

The ektachrome of the February drug ad was presented and approved with favorable comment.

(c) Upon motion duly made, seconded and unanimously carried, a revised advertising and promotion budget totaling \$1,336,178 was established.

7. Virginia Consumer Survey.

Ford Sammis reported on a recent survey of beer bottle sales and distribution in the state of Virginia. Copies of this study will be mailed to committee members shortly.

[fol. 456] 8. West Coast Subcommittee Recommendation.

Frank Wright, reporting on unanimous agreement at a meeting of the West Coast Subcommittee in San Francisco on September 17, 1957, recommended to the parent committee that \$50,000 be allocated from the national budget to promote one-way bottles for both soft drinks and beer in the Los Angeles area in 1958.

Following considerable discussion, the committee directed Mr. Cheney to earmark \$50,000 in funds for a possible program in Los Angeles in 1958 with the provisos 1) that full details of the proposed program be submitted to the parent committee for further consideration at its next meeting, and 2) that, should the program go forward, the appropriation from the national budget be matched dollar for dollar by GCM member companies operating on the West Coast.

9. Next Meeting.

No date was set for the next meeting. It is hoped, however, to hold it in conjunction with the Trustees meeting now scheduled for December 5.

10. Adjournment.

There being no further business, Chairman Pollock declared the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 457]

GOVERNMENT'S EXHIBIT 102

Minutes of Meeting

Market Research and Promotion Committee
GCMI Conference Room
New York 16, New York

December 4, 1957

Present:

G. A. Mengle, Chairman—Brockway Glass Company, Inc., E. D. Easterby—Laurens Glass Works, Inc., J. W. Fisher—Ball Brothers Company, Inc., J. M. Foster—Foster-Forbes Glass Company, W. J. Green—Thatcher Glass Manufacturing Company, Inc., S. V. Tuttas—Crown Cork & Seal Company, Inc., P. O'C. White—White Cap Company.

Absent:

C. G. Bensinger—Owens-Illinois Glass Company, J. C. Feagley—Armstrong Cork Company, W. V. Fisher—Anchor Hocking Glass Corporation, J. S. Heisler—Maryland Glass Corporation, A. W. Wishart—Knox Glass, Inc.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, S. B. DeMerell—Anchor Hocking Glass Corporation, Fred E. Fuller—General Counsel, V. L. Hall—GCMI.

1. Call to Order.

The meeting was called to order at 10:45 A. M. by Chairman Mengle. Mr. Cheney served as secretary.

2. Minutes of Previous Meeting.

Upon motion made, seconded and unanimously carried, the minutes of the previous meeting on September 30, 1957, were approved as issued by the secretary.

3. Progress Report—1957 Program.

Mr. Cheney reported on the 1957 advertising program, on the use of 2,750 "Your Glass Festival Kits" in retail food stores throughout the country, and gave a preliminary report on the merchandising research conducted in four Giant food stores in the Washington D. C. area. Mr. Barnum reported on general publicity activities for the year.

4. Progress Report—1958 Program.

The committee approved an ektachrome of the milk advertisement scheduled for next September. Comment was generally favorable. Other advertisements in the 1958 schedule were discussed briefly, as were general publicity [fol. 458] activities for the coming year.

An agency budget, revised to accommodate a rate increase, was presented. The total remained unchanged at \$1,208,178.

In discussing Gallup & Robinson and Starch rating services, Mr. Cheney reported that the registration of GCMI advertisements by Gallup & Robinson scored 13.7 compared with 12.1 for the average of all packaging advertisements checked by Gallup & Robinson. The same firm has also reported that GCMI advertisements are second in order of rank of 26 different associations tested during the past two years, the GCMI average being 14.2 compared with an average of 6.1 for the 26 associations whose advertisements were checked.

5. Los Angeles Soft Drink Program—1958.

Mr. Cheney reported on his visit to the West Coast late in October, and copies of a plan prepared by Kenyon & Eckhardt and subsequently modified, were distributed to those present. Mr. Fuller discussed the legal aspects of a supporting merchandising program.

Following considerable discussion, upon motion duly

made, seconded and unanimously passed, the following resolution was adopted:

Resolved, That the Market Research and Promotion Committee accepts the revised recommendation of the West Coast Subcommittee as submitted by Mr. R. L. Cheney, to this meeting, covering an advertising and promotion program in support of glass bottles for soft drinks, in the Los Angeles, California area from May through September, 1958, at a total budget of \$50,000, of which \$25,000 is to be supplied from the accumulated surplus of previous year's GCM advertising and promotion funds subject to this sum's being matched by voluntary contributions from the California members, and it is further

Resolved, That this program shall consist of the following activities:

- (1) A radio spot advertising program covering the advantages of glass bottles for soft drinks, with particular reference to returnable bottles and to no-deposit bottles.
- (2) a. A test promotion involving an advertising allowance to cover space within the newspaper advertisements of cooperating chain stores, devoted to soft drinks in glass bottles, together with allotment of adequate shelf spacings for beverages in both returnable and no-deposit bottles, together with an arrangement for measuring sales results of the different beverage packages.
b. Participation in this test promotion to be solicited from all chain supermarket operators in the Los Angeles market who operate 19 or more supermarkets there, this being considered the minimum number of stores necessary to give adequate coverage for a sound test.

[fol. 459] And it is further

Resolved, That in the event enough chain store operators accept participation in the test promotion program as to cause the expense of this portion of the program to exceed the \$15,000 allotted to it in the proposed

budget, GCMI will assume one-half of this overage subject to the California members assuming the other half.

6. Canadian Program—1958.

Canadian members of GCMI will continue to advertise in Chatelaine magazine in 1958, Mr. Cheney reported. The schedule calls for six insertions—in February, April, June, September, October and November.

7. Baby Food in California.

A report on the current baby food situation in California was made by Mr. Cheney, and packer ads from current California newspapers were displayed.

8. New Business.

Mr. Cheney presented a request from GBBA for GCMI support at labor trade fairs. It was agreed to table the request.

9. Next Meeting.

No date was set for the next meeting.

10. Adjournment.

There being no further business, Chairman Mengle declared the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 460]

GOVERNMENT'S EXHIBIT 103

Minutes of Meeting

Market Research and Promotion Committee
GCMI Conference Room
New York, New York

April 10, 1958

Present:

G. A. Mengle, Chairman—Brookway Glass Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, J. C. Feagley—Armstrong Cork Company, J. W. Fisher—Ball Brothers Company, Inc., W. J. Green—Thatcher Glass Manufacturing Company, Inc., S. V. Tuttas—Crown Cork & Seal Company, Inc.

Absent:

E. D. Easterby—Laurens Glass Works, Inc., W. V. Fisher—Anchor Hocking Glass Corporation, J. M. Foster—Foster-Forbes Glass Company, J. S. Heusler—Maryland Glass Corporation, P. O'C. White—White Cap Company, A. W. Wishart—Knox Glass, Inc.

Others Present:

Rush Baraun—GCMI, R. L. Cheney—GCMI, W. M. Furlow—Knox Glass, Inc., M. A. Hellrung—Owens-Illinois Glass Company, J. Gordon King—Hazel-Atlas Glass Division, Continental Can Company, Inc., C. E. Wagner—GCMI.

1. Call to Order.

The meeting was called to order at 10:10 A. M. by Chairman Mengle. Mr. Cheney served as secretary. In the absence of a quorum, the chairman stated that any actions of this meeting would be subject to ratification at the next meeting.

2. Minutes of Previous Meeting.

Upon motion duly made, seconded and unanimously carried, the minutes of the previous meeting on December 4, 1957, were approved as issued by the secretary.

3. Approval of Ektachromes.

Ektachromes of the applesauce advertisement scheduled for the October issues of consumer magazines, and ektachromes of the jam-peanut butter advertisement scheduled for November issues, were submitted to the Committee for consideration. Following discussion, it was suggested that the applesauce ad be re-taken, sharpening the background focus. A jam and peanut butter ektachrome was approved.

[fol. 461] 4. Rate Increases.

The Committee was advised of the following increases in magazine rates:

Family Circle	— 25%—effective in July
Ladies' Home Journal	— 8%—effective in August
Supermarket News	— 9%—effective in July
Progressive Grocer	— 10%—effective in July

The above rate increases for the remainder of 1958 total \$29,600.

Mr. Cheney explained that these rate increases could be covered by unexpended 1957 funds—as were previous rate increases amounting to \$26,300.

Accordingly, upon motion made, seconded, and unanimously carried, it was voted to continue the advertising media schedule as approved for 1958 in view of the fact that increases could be handled from existent funds.

5. Report on GCMI-Giant Study.

Following distribution of numbered copies of "The GCMI-Giant Study" (on a one-to-a-company basis), Mr. Cheney outlined promotional plans for this extensive project. Included are: Presentations to retailer and packer groups, trade advertisements, a booklet for widespread distribution.

6. Glass Festival—1958.

Plans for extending the successful in-store promotion conducted in 1957 were presented for Committee consideration. It was agreed that larger stores and more of them would be the aim in 1958. Specific art for inclusion in the

promotional kit was discussed. Upon motion made, seconded, and unanimously carried, it was agreed to proceed as outlined.

7. Los Angeles Soft Drink Program—1958.

Mr. Cheney, just returned from West Coast meetings, reported on the 1958 soft drink campaign. The Committee requested him to verify a point of nomenclature and proceed accordingly.

7A. Baby Food Folder.

Upon motion made, seconded, and unanimously carried, Mr. Cheney was instructed to proceed on the production of a baby food folder or flyer similar to the ones done in the past three years. This is to be offered to all baby food companies for possible incorporation in their direct mail program.

[fol. 462] 8. Report on New No-Deposit Beer Bottle Designs.

Earl Wagner, GCMI development engineer, joined the meeting and subsequently reported on a joint meeting of the Technical Subcommittee on Container Design and Specifications and the Crown Finish Subcommittee of the Committee on Standards for Finishes held at GCMI headquarters on April 8 and 9. Discussion followed.

8A. Anniversary of Beer Return.

Upon motion made, seconded, and unanimously carried, Mr. Cheney was instructed to include the following line in GCMI advertisements scheduled for thirty-nine labor papers:

"The glass container manufacturers salute the U. S. brewing industry on the 25th anniversary of the return of beer and ale to the American scene."

9. Security Analysts.

The Committee looked with favor upon meetings of security analysts outlined by Mr. Cheney. Present plans call for meetings in Boston and New York on successive days in mid-May. Freshly printed copies of "Glass Containers—

1957" will be presented at these meetings. It is possible that similar sessions in Philadelphia and Chicago will be arranged following industry meeting at White Sulphur Springs.

10. Motivation Research.

As previously suggested by a member of the Market Research and Promotion Committee, the Institute for Motivational Research, Inc.—of which Dr. Ernest Dichter is president—was approached on whether the Institute's techniques might yield a solution to the glass container industry's beer problem and might point to a possible course of action.

Subsequently, Albert Shepard, executive vice-president of the research organization, spent the afternoon at GCMI headquarters, and Mr. Cheney reported Mr. Shepard's remarks to the Committee. Following discussion both on the industry's beer problem and on motivational research, a motion was made, seconded, and unanimously carried to engage the Dichter organization to make a study of the beer industry for GCMI, said study to cost approximately \$20,000.

11. New Business.

A. Upon motion made, seconded, and unanimously carried, it was agreed that results of the Sammis surveys should be made available to individual GCMI member companies for promotional use—subject to the specific approval of Mr. Cheney.

[fol. 463] B. Acting upon the suggestion of a Committee member, a motion was made, seconded, and unanimously carried to explore the possibility of presenting details of GCMI's advertising and promotional program to the membership of the National Preservers Association at their annual meeting in Chicago in mid-February of 1959. If an audience of a hundred could be guaranteed, and provided no precedent would be set, Mr. Cheney was instructed to proceed as outlined.

12. Next Meeting.

The date of the next meeting was set for 2 o'clock Tuesday afternoon, May 20, 1958, at The Greenbrier, White Sulphur Springs, West Virginia.

13. Adjournment.

There being no further business, Chairman Mengle declared the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 464] GOVERNMENT'S EXHIBIT 104

Minutes of Meeting Market Research and Promotion Committee White Sulphur Springs, West Virginia

May 20, 1958

Present:

G. A. Mengle, Chairman—Brockway Glass Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company, J. W. Fisher—Ball Brothers Company, Inc., J. M. Foster—Foster-Forbes Glass Company, W. J. Green—Thatcher Glass Manufacturing Company, Inc., S. V. Tuttas—Crown Cork & Seal Company, Inc., P. O'C. White—White Cap Company, A. W. Wishart—Knox Glass, Inc.

Absent:

W. V. Fisher—Anchor Hocking Glass Corporation, J. S. Heusler—Maryland Glass Corporation.

Others Present:

E. F. Ball—Ball Brothers Company, Inc., Bush Barnum—GCMI, R. A. Blunt—Buck Glass Company, Inc., R. L. Cheney—GCMI, J. F. Connelly—Crown Cork & Seal Company, Inc., S. B. DeMerell—Anchor Hocking Glass Corporation, Fred E. Fuller—General Counsel, W. M. Furlow—Knox Glass, Inc., R. E. Graham—Owens-Illinois Glass Company, V. L. Hall—GCMI, P. I. Heusler, Jr.—Maryland Glass Corporation, J. G. King—Hazel-Atlas Glass Division, Continental Can Company, Inc., F. H. Wright—GCMI.

1. Call to Order.

The meeting was called to order at 2:00 p. m. by Chairman Mengle. Mr. Cheney served as secretary.

2. Minutes of the Previous Meeting.

Upon motion duly made, seconded, and unanimously carried, the minutes of the previous meeting on April 10, 1958, were approved as issued by the secretary.

[fol. 465] 3. Approval of Proof.

Proof of the final three ads in the 1958 consumer series (September—Milk; October—Applesauce; and November—Jam and Peanut Butter) were submitted and approved by the Committee with the exception of a suggestion re the body copy of the milk advertisement. The point was referred to the trustees for a policy decision.

4. Report on GCMI-Giant Study.

Mr. Cheney reported on "The GCMI-Giant Study," and photostatic copies of a proposed GCMI booklet on the subject were distributed for Committee discussion. Following general discussion, Mr. Cheney's recommendation to refer this matter to the Task Committee was agreed upon.

Mr. Cheney requested that the photostatic copies be given to the appropriate personnel in each organization with the request that it be returned to Mr. Cheney with written comment.

It was also agreed that photostatic copies be sent to the Task Committee for study—with the view to getting their comment on suggested procedure. It was decided that the matter would not be presented to the membership at this meeting until these comments have been received from the Committee members.

5. Motivation Research on Beer Packaging.

Mr. Cheney explained that the Beer Bottle Subcommittee concurred with the suggestion of exploring first the area which we appear to know the least about, namely, the area of beer distribution—as opposed to brewing, retailing, or consumption. Following discussion, it was agreed to proceed with the proposed study.

6. Security Analysts.

Mr. Cheney reported briefly on current security analysts presentations.

7. Plans for 1959 Program.

Mr. Cheney stated that meetings with Kenyon & Eckhardt to develop the 1959 program would start June 30, with presentation to the Committee in September, following Advertising Advisory Committee and Task Committee sessions.

8. National Preservers Association Meeting.

Mr. Cheney stated briefly that, after exploration, he did not feel it would be wise to proceed as heretofore discussed. A motion was made, seconded and unanimously carried, to rescind the action made at the previous meeting on April 10, 1958.

[fol. 466] 9. New Business.

Mr. Cheney introduced the subject of the forthcoming U. S. Steel promotional program in behalf of canned soft drinks. Several member companies, he said, had been asked by bottlers for GCM plans.

Because the 3:30 p. m. adjournment time had arrived, it was decided to hold a breakfast meeting at 8:00 a. m. on Thursday morning, May 22, to explore this subject further.

10. Adjournment.

There being no further business, Chairman Mengle declared the meeting adjourned at 3:30 p. m.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 467] • GOVERNMENT'S EXHIBIT 105

Minutes of Meeting

Market Research and Promotion Committee
White Sulphur Springs, West Virginia

May 22, 1958

Present:

G. A. Mengle, Chairman—Brockway Glass Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company, J. W. Fisher—Ball Brothers Company, Inc., J. M. Foster—Foster-Forbes Glass Company, P. I. Heuissler, Jr.—Maryland Glass Corporation, J. G. King—Hazel-Atlas Glass Division, Continental Can Company, Inc., S. V. Tuttas—Crown Cork & Seal Company, Inc.

Absent:

W. V. Fisher—Anchor Hocking Glass Corporation, W. J. Green—Thatcher Glass Manufacturing Company, Inc., E. M. Turner—Metro Glass Company, Inc., A. W. Wishart—Knox Glass, Inc.

Others Present:

E. F. Ball—Ball Brothers Company, Inc., Bush Barnum—GCMI, R. A. Blunt—Buck Glass Company, Inc., R. L. Cheney—GCMI, S. B. DeMerell—Anchor Hocking Glass Corporation, W. M. Furlow—Knox Glass, Inc., R. E. Graham—Owens-Illinois Glass Company, S. L. Rairdon—Owens-Illinois Glass Company, Lawrence Wilkinson—Hazel-Atlas Glass Division, Continental Can Company, Inc.

1. Call to Order.

This breakfast meeting was called to order by Chairman Mengle at 8:20 a.m. Mr. Cheney served as secretary.

2. Canned Soft Drink Promotion.

The forthcoming advertising and promotion program of U. S. Steel as published in the public press was outlined

by Mr. Cheney who then reported on details of GCMI efforts in behalf of bottled soft drinks.

The subject was extensively discussed, and upon motion duly made, seconded, and unanimously carried, the following action taken:

(a) Mr. Cheney was instructed to inform the members of the many GCMI activities promoting glass-bottled soft drinks, for reference to interested bottlers.

[fol. 468] (b) The radio spot program in the Los Angeles area is to be stepped up during its June to September scheduled period, within the ability of the budget to accommodate this.

(c) The needs of the situation are to be reviewed as the summer progresses so that the Committee can determine the advisability of extending the program for an additional period.

3. Re-scheduling of "Ancient Art—Modern Magic."

Following a suggestion, it was agreed generally that the new ten-minute film should be re-shown at the concluding session on Friday prior to Mr. Hoadley's address.

4. Milk Ad.

A report was made on the board of trustees ruling to delete the word "leak-proof" from the milk ad and a policy of confining advertising copy to affirmative statements about the favorable characteristics of glass containers was reiterated.

5. Sammis Reports.

Reaction of the Committee was asked for on the sample Sammis research summary covering glass-packed tomato juice.

6. Adjournment:

There being no further business, the meeting was adjourned at 9:30 a. m.

Respectfully submitted, R. L. Cheney, Secretary.

Minutes of Meeting

Market Research and Promotion Committee

GCMI Conference Room

New York, New York

September 25, 1958

Present:

J. W. Fisher, Chairman—Ball Brothers Company, Inc.,
C. G. Bensinger—Owens-Illinois Glass Company, E. D.
Easterby—Laurens Glass Works, Inc., J. C. Feagley—Arm-
strong Cork Company, J. M. Foster—Foster-Forbes Glass
Company, W. J. Green—Thatcher Glass Manufacturing
Company, Inc., J. Gordon King—Hazel-Atlas Glass Divi-
sion, Continental Can Company, Inc., G. A. Mengle—
Brockway Glass Company, Inc., E. M. Terner—Metro Glass
Company, Inc., S. V. Tuttas—Crown Cork & Seal Company,
Inc., A. W. Wishart—Knox Glass, Inc.

Absent:

W. V. Fisher—Anchor Hocking Glass Corporation, P. I.
Heuisler, Jr.—Maryland Glass Corporation.

Others Present:

Bush Barnum—GCMI, Leonard Carlton—Kenyon & Eck-
hardt, Inc., R. L. Cheney—GCMI, S. B. DeMerell—Anchor
Hocking Glass Corporation, R. E. Graham—Owens-Illinois
Glass Company, W. D. Harvey—Kenyon & Eckhardt, Inc.,
J. S. Heuisler—Maryland Glass Corporation, Andrew Hew-
itt—Kenyon & Eckhardt, Inc., W. B. Lewis—Kenyon &
Eckhardt, Inc., R. B. Shirey—Kenyon & Eckhardt, Inc.

1. Call to Order.

The meeting was called to order by Chairman Fisher at
9:30 A. M. Mr. Cheney served as secretary.

2. Minutes of Previous Meeting.

Upon motion made, seconded and unanimously carried,
the minutes of the previous meeting on May 22, 1958, were
approved as issued by the secretary.

[fol. 470] 3. Review of Proposed 1959 Advertising and Promotion Program.

Following opening remarks by Mr. Cheney, representatives of Kenyon & Eckhardt (Messrs. Lewis, Hewitt, Shirey, Harvey and Carlton) joined the meeting and presented a 57-page recommendation for 1959. Layout and copy of twenty-two advertisements were presented for Committee consideration. Each layout was discussed in detail, as were all aspects of the proposed campaign.

4. Proposed Budget.

Following departure of agency representatives, the program was further discussed, and a proposed budget presented, copy of which is attached. Upon motion duly made, seconded, and unanimously carried, with Dr. Wishart abstaining, it was:

Resolved, That the Market Research and Promotion Committee approves the program submitted by Kenyon & Eckhardt (based upon twenty-two ads in Life Magazine) and previously approved by GCMI representatives and two subcommittees, with the understanding that individual ads would be discussed further at a later meeting.

Also, upon motion duly made, seconded and unanimously carried, it was:

Resolved, That the Market Research and Promotion Committee adopts a total advertising and promotion budget of \$1,378,650 as submitted, and submits said budget to the Board of Trustees with the recommendation that it be approved.

5. Review of Houston Situation.

Following presentation of the story by Mr. Cheney, the Committee, upon motion duly made, seconded and unanimously carried, voted to leave to the discretion of the General Counsel whether or not an appeal should be made to the office of the Attorney General of Texas, protesting recent discriminatory action against the sale of milk in glass bottles in Houston stores.

6. Task Committee Action on GCMI-Giant Study.

Upon motion made, seconded and unanimously carried, the parent Committee approved the recommendation of the Task Committee to print the first half of the GCMI-Giant Study and distribute it to members.

7. Report of Beer Bottle Subcommittee Meeting.

Mr. Cheney reported on this meeting held at GCMI headquarters in New York on August 21st. Following discussion, it was agreed to recommend to the program committee that Dr. Albert Shepard, executive vice president of the Institute for Motivational Research, Inc., be invited to address the membership meeting at The Cloister, Sea Island, Georgia on November 11th.

[fol. 471] 8. New Business.

The outlawing of bottled soft drinks at the 1958 Indiana State Fair held at Indianapolis in August was brought to the attention of the Committee by Mr. Cheney. Possible remedial action was discussed.

Upon motion duly made, seconded and unanimously carried, it was agreed to proceed with the printing and distribution of the 16-page booklet entitled "Mason Jar Centennial: 1858-1958."

9. Next Meeting.

It was agreed that the next meeting of the Committee should be held at The Cloister, Sea Island, Georgia, on Monday, November 10th, at 1:30 P. M.

10. Adjournment.

There being no further business, Chairman Fisher declared the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

Attachment.

[fol. 472]

GOVERNMENT'S EXHIBIT 107

Proposed Budget For 1959

Market Research and Promotion Division
Glass Container Manufacturers Institute, Inc.

September 25, 1958

[fol. 473]

A

Advertising and Promotion as recommended by Kenyon & Eckhardt, Inc.

	1958 Budget	1959 Budget	Amount (over) or under 1958
Advertising			
National Magazines			
(Space).....	\$ 842,828	\$ 909,409	(\$66,581)
Trade Papers			
(inc. Glass Packer).....	57,485	56,133	1,352
Labor Publications.....	30,000	30,100	(\$100)
Production (all media).....	120,000	151,900	(31,900)
Total Media.....	\$1,050,313	\$1,147,542	(\$97,229)
Promotion, Publicity & Merchandising			
Publicity, Consumer & Trade.....	\$ 8,750	\$ 10,630	(\$ 1,880)
Educational Publicity.....	9,315		9,315
Merchandising the Advertising.....	47,300	33,575	13,725
Glass Festival.....	37,975	37,975	
Merchandising Research.....	19,525		19,525
Total.....	\$ 122,865	\$ 82,180	\$40,685
Contingency.....	\$ 35,000	\$ 20,278	14,722
Total.....	\$1,208,178	\$1,250,000	(\$41,822)

[fol. 474]

C

Advertising & Promotion
Income

Dues Rate Year	16/100 of 1%	Increase
1955.....	\$1,108,218	
1956.....	\$1,172,728	+5.8%
1957.....	\$1,278,073	+8.9%
1958.....	\$1,353,541	+6.9%
1959 (Est.).....	\$1,372,749	+1.4%

[fol. 475]

GOVERNMENT'S EXHIBIT 108

Minutes of Meeting

Market Research and Promotion Committee
and West Coast Subcommittee

Terrace Room
Arizona Biltmore Hotel
Phoenix, Arizona

November 12, 1936

Present:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Company, Inc., J. S. Algeo—Hazel-Atlas Glass Company, E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company, J. M. Foster—Foster-Forbes Glass Company, T. S. Gallagher—Crown Cork & Seal Company, Inc., J. S. Heuissler—Maryland Glass Corporation, G. A. Mengle—Brockway Glass Company, Inc.

Absent:

W. V. Fisher—Anchor Hocking Glass Corporation, P. O'C. White—White Cap Company.

West Coast Present:

K. C. White, Chairman—Owens-Illinois Glass Company, R. H. Dallas—Maywood Glass Company, William Simkins—Litchford-Marble Glass Company.

West Coast Absent:

E. L. Casey—Hazel-Atlas Glass Company, J. W. Donaldson—Ball Brothers Company, Inc., J. B. Miller—Thatcher Glass Manufacturing Company, Inc., E. B. Spread—Crown Cork & Seal Company, Inc.

Others Present:

F. E. Balling—Litchford-Marble Glass Company, Bush Barnum—GCMI, E. S. Campbell—Northwestern Glass Company, R. L. Cheney—GCMI, S. B. DeMerell—Anchor

Hocking Glass Corporation, Fred E. Fuller—GCM I General Counsel, H. V. Fulton—Maywood Glass Company, J. H. Funkey—Carr-Lowrey Glass Company, J. A. Giddings—Brockway Glass Company, Inc., W. J. Green—Thatcher Glass Manufacturing Company, Inc., V. L. Hall—GCM I, John Lauritzen—GCM I West Coast Counsel, Ford Sammis—Ford Sammis & Company, Frank H. Wright—GCM I.

[fol. 476] 1. Call to Order.

The meeting was called to order at 1:30 P. M. by Chairman Pollock.

2. Minutes of Previous Meeting.

The minutes of the preceding meeting on September 26, 1956 were approved as distributed by the secretary.

3. Task Group Recommendations.

A. Mr. Cheney discussed the Task Committee recommendation that GCM I advertising be evaluated by one of the recognized authorities in this field. The Market Research and Promotion department and the agency recommended the Starch readership studies. These would cost approximately \$2,000 in 1957. Upon motion duly made, seconded and unanimously carried, this recommendation was approved.

B. Mr. Cheney discussed use of the KAB insignia in the Virginia Beer Program, and the possibility of incorporating the seal in national ads was raised. Discussion followed. The matter was temporarily tabled, and the parent committee directed that any further discussion be with the Task Committee.

4. Los Angeles Soft Drink Bottle Program.

Mr. White, chairman of the West Coast Subcommittee, discussed the 1956 effort in Los Angeles, expressing the opinion that it had constituted an excellent holding campaign and that he felt it important to have a continuing program. There followed a discussion of other trouble points, notably Milwaukee. Chairman Pollock stated that West Coast companies had raised a \$20,000 fund in 1956; that Kenyon & Eckhardt had handled the program and

members of the West Coast Subcommittee expressed the opinion that they had done an excellent job.

Mr. Sammis then presented results of his Los Angeles survey.

After discussion, in response to suggestions from the West Coast Subcommittee members, and Mr. Cheney's recommendation, upon motion duly made, seconded and unanimously carried, it was

Resolved, That \$25,000 be allocated for a continuing Los Angeles area promotion in 1957, subject to voluntary subscriptions from the California members sufficient to complete a \$40,000 to \$45,000 budget for this operation as finally determined by the Director of Market Research and Promotion.

5. Advertising.

Mr. Cheney then presented to the Committee slides—some in photographic form, others in layout form—of the 1957 consumer advertisements as follows:

[fol. 477] February—Beets

March—Pickles

April—Vaccines

May—Milk

June—First Soft Drink

July—First Soft Drink and Beer

August—Second Soft Drink

September—Baby Foods

October—Juices

November—Cosmetics

Discussion of the ads followed each presentation.

In addition, a layout of a detergent advertisement was shown the committee. It was agreed that this would not be included in the 1957 series.

6. Future Discussions.

It was suggested that baby foods and one-way soft drink bottles both needed further discussion. It was decided to request the Task Committee to study these subjects at an early meeting and report back to this committee.

7. Next Meeting.

The next meeting of the Market Research and Promotion Committee is to be held in conjunction with the January meeting of the Board of Trustees, exact date to be determined later.

8. Adjournment.

Because of a scheduled meeting of the Board of Trustees at four o'clock, the Market Research and Promotion meeting was adjourned at that hour.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 478] — GOVERNMENT'S EXHIBIT 109

Minutes of Meeting

Market Research and Promotion Task Committee
GCMI Conference Room
New York, New York

January 15, 1957

Present:

R. H. Hetzel, Chairman—Armstrong Cork Company, S. F. Davis—Owens-Illinois, S. B. DeMerell—Anchor Hocking Glass Corporation, J. H. Funkey—Carr-Lowrey Glass Company, J. A. Giddings—Brockway Glass Company, Inc., P. I. Heusler—Maryland Glass Corporation, P. S. Holmquest—Thatcher Glass Manufacturing Company, Inc., J. H. Majesky—Continental Can Company, Inc., Hazel-Atlas Glass Division.

Absent:

W. H. Ellis—The Lamb Glass Company, G. F. Rieman—Ball Brothers Company, Inc., R. H. Roper, Jr.—Laurens Glass Works, Inc.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, K. M. Hay—Ball Brothers Company, Inc., F. H. Wright—GCMI.

1. Minutes of Previous Meeting.

Mr. Cheney outlined the minutes of the previous Task Committee meeting on October 24, 1956. Upon motion duly made, seconded and passed, they were approved.

2. Los Angeles 1957 Soft Drink Program.

Mr. Cheney read the resolution passed by the M R & P Committee on November 12, 1956, and reported on current activities. Highlights of recent surveys in the Los Angeles area by Ford Sammis were presented.

3. No-Deposit Bottle Promotion in National Advertising.

Mr. Cheney outlined the pros of incorporating one-way advertising in national ads as follows: 1) it would help Los Angeles, 2) the potential market is vast. Cons: 1) agency is opposed because of scant distribution—one-half of 1% nationally, 2) leading customers are not in one-ways, 3) resultant confusion of copy might result in a boost for cans, 4) the glass message would be diluted.

A tally vote was taken and agreement was general that no-deposit bottles should not be promoted in national advertisements. It was subsequently agreed that the subject should be kept alive; that, while we were not at a proper [fol. 479] point to advertise one-ways nationally yet, the situation should continue to be watched.

4. Review of the Baby Food Problem.

Mr. Cheney explained that the parent committee wanted recommendations and suggestions from the Task Committee on how GCMI might extend its efforts in behalf of glass-packed baby foods.

Following discussion a tally vote indicated that the Task Committee favored continuing past and present efforts without extension.

5. Review of the Magazine Ads.

The 1957 ads were then reviewed. In various stages of production, each ad was commented on in turn. Reception, in the main, was favorable.

6. KAB Insignia.

The committee unanimously voted against including the KAB insignia in national GCMI advertising.

7. Merchandising Advertising.

Mr. Cheney said there were two places, namely, member trade paper advertising and member field staffs, where the overall glass story might be more effectively told. Discussion followed.

8. Merchandising Research Program.

Mr. Cheney outlined the forthcoming merchandising research program in six stores—each of which does a 3½ million dollar volume—in the Giant Food chain in and around Washington, D. C.

9. Virginia Beer Bottle Program.

Mr. Cheney reviewed the Virginia beer bottle program.

10. Adjournment.

There being no further business, the meeting was adjourned at 2:00.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 480]

GOVERNMENT'S EXHIBIT 110

Minutes of Meeting

Market Research and Promotion Task Committee
GCMI Conference Room
New York, New York

September 11, 1957

Present:

S. B. DeMerell—Anchor Hocking Glass Corporation,
J. H. Funkey—Carr-Lowrey Glass Company, K. M. Hay—
Ball Brothers Company, Inc., P. I. Heusler, Jr.—Maryland
Glass Corporation, P. S. Hohnquest—Thatcher Glass Manu-
facturing Company, Inc., R. H. Roper, Jr.—Laurens Glass
Works, Inc.

Absent:

S. F. Davis—Owens-Illinois Glass Company, W. H. Ellis—The Lamb Glass Company, J. A. Giddings—Brockway Glass Company, Inc., R. H. Hetzel, Chairman—Armstrong Cork Company, J. H. Majesky—Hazel-Atlas Glass Division, Continental Can Company, Inc.

Others Present:

Bush Barnum—GCMI, A. G. Beltz—Brockway Glass Company, Inc., R. L. Cheney—GCMI, John Duncan—Hazel-Atlas Glass Division, Continental Can Company, Inc., Kevin Solon—Owens-Illinois Glass Company.

1. Call to Order.

The meeting was called to order at 10:00 A. M. by Acting Chairman Holmquest who presided in Mr. Hetzel's absence. Mr. Cheney served as secretary.

2. Minutes of the Previous Meeting.

Upon motion made, seconded and unanimously carried, the minutes of the previous meeting were approved as issued by the secretary.

3. Opening Remarks.

In his opening remarks, Acting Chairman Holmquest defined the purpose of the Task Committee meetings, namely, to screen GCMI advertising and to make recommendations to the Parent Committee.

4. Review of Progress on 1958 Program.

Mr. Cheney reviewed the progress of the 1958 program—from initial meetings with the agency last June through the [fol. 481] Advertising Advisory Committee meeting on August 15, and the Parent Committee meeting on August 27. He then presented to the Committee a digest of the 58-page recommendation presented to GCMI by Kenyon & Eckhardt, Inc.

5. Consumer Ad Schedule.

A discussion of the proposed schedule for consumer ads followed.

6. Discussion of Consumer Ads.

Roughs of the proposed consumer ads—with accompanying copy—were next presented by Mr. Cheney for committee consideration. Detailed discussion of each ad followed.

7. Remainder of 1958 Program.

Mr. Cheney reviewed for the committee the proposed trade advertising for 1958, merchandising the advertising, merchandising research, and the Glass Festival.

8. Next Meeting.

No date was set for the next meeting of the committee.

9. Adjournment.

There being no further business, Acting Chairman Holmquest declared the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 482]

GOVERNMENT'S EXHIBIT 111

Minutes of Meeting

Market Research and Promotion Task Committee

GCMC Conference Room

New York, New York

September 16, 1958

Present:

K. M. Hay, Chairman—Ball Brothers Company, Inc.,
W. H. Ellis—Lamb Glass Company, J. R. Harkness—Fairmount Glass Works, Inc., R. H. Hetzel—Armstrong Cork Company, P. S. Holmquest—Thatcher Glass Manufacturing Company, Inc., R. H. Roper, Jr.—Laurens Glass Works, Inc.

Absent:

A. G. Beltz—Brockway Glass Company, Inc., S. F. Davis—Owens-Illinois Glass Company, S. B. DeMerell—Anchor Hocking Glass Corporation, J. H. Funkey—Carr-Lowrey

Glass Company, J. W. Thayer—Hazel-Atlas Glass Division, Continental Can Company, Inc.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, John Duncan—Hazel-Atlas Glass Division, Continental Can Company, Inc., G. R. Hollen—Brockway Glass Company, Inc., Kevin Solon—Owens-Illinois Glass Company.

1. Call to Order.

The meeting was called to order at 10:00 A. M. by Chairman Hay. Mr. Cheney served as secretary.

2. Previous Minutes.

Minutes of the previous meeting were read by the secretary. Upon motion duly made, seconded, and unanimously carried, they were approved as read.

3. Review of Proposed 1959 Advertising and Promotion Program.

The secretary presented for Committee consideration and comment an advertising and promotion plan for 1959, stating that the program bore the recommendation of GCMI's advertising agency—Kenyon & Eckhardt, Inc.—as well as GCMI's Market Research and Promotion department.

[fol. 488] The 57-page recommendation covering media, creative, budgets, promotion and advertising copy—together with roughs of 22 advertisements incorporating changes suggested by the Advertising Advisory Committee at a meeting on August 27th—were presented to the Committee by Messrs. Cheney and Barnum, general discussion following.

Changes recommended by the Task Committee were subsequently incorporated prior to final presentation to the Market Research and Promotion Committee on September 25th.

4. Giant Study.

Mr. Cheney next outlined use of the "GCMI-Giant Study," and the Committee voted unanimously to proceed as recommended.

5. Next Meeting.

No date was set for the next meeting of the Task Committee.

6. Adjournment:

There being no further business, Chairman Hay adjourned the meeting about 5:00 P. M.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 484]

GOVERNMENT'S EXHIBIT 112

Minutes of Meeting Advertising Advisory Committee GCMC Conference Room New York 16, N. Y.

August 26, 1958

Present:

W. M. Furlow—Knox Glass, Inc., J. H. Gilluley—Anchor Hocking Glass Corporation, Bert Herron—Owens-Illinois Glass Company, F. T. Murray—Crown Cork & Seal Company, Inc., V. C. Schranz—Ball Brothers Company, Inc.

Absent:

Max Banzhaf—Armstrong Cork Company.

Others Present:

Bush Barnum—GCMC, Leonard Carlton—Kenyon & Eckhardt, Inc., R. L. Cheney—GCMC, W. D. Harvey—Kenyon & Eckhardt, Inc., R. B. Shirey—Kenyon & Eckhardt Inc., R. D. Wilcox—Armstrong Cork Company.

1. Call to Order.

The meeting was called to order at 10:00 A. M. by R. L. Cheney, GCMC's executive director and marketing manager, who presided.

2. Round Table Discussion.

In opening the meeting, Mr. Cheney stated that, as in previous years, the agency would present for Committee consideration and comment an advertising and promotion program recommended both by Kenyon & Eckhardt and GCMI's Market Research and Promotion department.

Messrs. Shirey, Harvey and Carlton of the Kenyon & Eckhardt staff then joined the meeting and presented a detailed recommendation together with layouts and copy.

Following the departure of agency representatives at about 12:30 P. M., discussion—both general and specific—about the new program began. Various changes suggested by the Committee will be incorporated prior to similar presentations to the Task Committee on Tuesday, September 16th, and to the Market Research and Promotion Committee on Thursday, September 25th.

[fol. 485] 3. Next Meeting.

No date was set for the next meeting of the Advertising Advisory Committee.

4. Adjournment.

There being no further business, the meeting was adjourned about 5:00 P. M.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 486]

GOVERNMENT'S EXHIBIT 113

Minutes of Meeting

Beer Bottle Subcommittee

GCMI Conference Room

New York, New York

June 26, 1956

Present:

R. E. Delaplane, Chairman—Owens-Illinois Glass Company, W. S. Bazzett—Thatcher Glass Manufacturing Co., Inc., J. E. Bellinger—Ball Brothers Company, Inc., E. M. Lawrence—Anchor Hocking Glass Corporation, G. A.

Mengle—Brockway Glass Company, Inc., R. M. Ulmer—Armstrong Cork Company.

Absent:

M. J. Jones—Obear-Nester Glass Company.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, J. A. Giddings—Brockway Glass Company, Inc., V. L. Hall—GCMI, M. A. Hellrung—Owens-Illinois Glass Company, P. S. Holmquest—Thatcher Glass Manufacturing Co., Inc., H. W. Kuni—GCMI, R. R. Shirey—Kenyon & Eckhardt, Inc.

1. Call to Order.

The meeting was called to order by the Chairman, Mr. R. E. Delaplane. Mr. Cheney acted as Secretary.

2. Minutes of Previous Meeting.

The minutes of the meeting were reviewed by the Secretary.

3. Virginia Restrictions.

Mr. Kuni reported on the recent removal of the fifteen-year-old restrictions on the use of no-deposit bottles for malt beverages by the Virginia Beverage Control Board. Commission members have indicated they will review the resulting situation after a trial period of six to twelve months.

4. Baltimore Brewers.

Mr. Cheney reported on conferences with brewers in neighboring states who plan an immediate large-scale advertising and promotion program in Virginia to re-introduce beer in no-deposit bottles at prices favorable to glass.

[fol. 487] 5. GCMI Program.

A discussion followed on the pros and cons of a GCMI advertising effort in Virginia at this time. It concluded with unanimous agreement that GCMI should undertake such a test program; that it should run six to eight months; that a target starting date of August 1, 1956, be established;

that total cost should not exceed \$60,000; that the effort would consist of a newspaper program in Richmond, Norfolk and the Alexandria area; that copy and illustration are to stress flavor, cleanliness, social acceptability and convenience; that price would not be mentioned; that ads are to carry the KAB insignia at the bottom.

6. Syracuse Study.

Mr. Shirey made a preliminary report on the extensive survey which the agency is currently conducting in Syracuse, New York.

7. Next Meeting.

It was decided to hold the next meeting of the Committee at GCMC headquarters in New York on Thursday, July 26, 1956.

8. Adjournment.

There being no further business, the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 488]

GOVERNMENT'S EXHIBIT 114

Minutes of Meeting

Beer Bottle Subcommittee
GCMC Conference Room
New York, New York

July 26, 1956

Present:

R. E. Delaplaine, Chairman—Owens-Illinois Glass Company, W. S. Bazzett—Thatcher Glass Manufacturing Co., Inc., J. A. Giddings—Brockway Glass Company, Inc., M. J. Jones—Obear-Nester Glass Company, E. M. Lawrence—Anchor Hocking Glass Corporation.

Absent:

J. E. Bellinger—Ball Brothers Company, Inc., R. M. Ulmer—Armstrong Cork Company.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, V. L. Hall—GCMI, Eric Marder—Kenyon & Eckhardt, Inc., R. B. Shirey—Kenyon & Eckhardt, Inc., C. H. Strickland—Brockway Glass Company, Inc.

1. Call to Order.

The meeting was called to order by the Chairman, Mr. R. E. Delaplane. Mr. Cheney acted as Secretary.

2. Minutes of Previous Meeting.

The minutes of the meeting of June 26, 1956, were approved as issued by the Secretary.

3. Virginia Beer Bottle Program.

The Subcommittee reviewed the advertising layouts and copy presented by Mr. Shirey of Kenyon & Eckhardt, subject to changes and suggestions offered by the Subcommittee. An opening date of August 9 was approved for the campaign, and the proposed schedule covering newspaper ads running through December, was approved,—budget for space and production to fall within the \$60,000 previously authorized.

The litter problem in Virginia was discussed and the prominent display of the KAB insignia in the ads as shown in the Kenyon & Eckhardt layouts was approved.

Plans for soliciting brewer and retailer cooperation with the campaign were approved. Brewers and distributors are to be covered by direct mail with schedules and ad proofs which will be offered in quantity. Retailers will be contacted by the newspapers.

[fol. 489] Ford Sammis & Company had completed field work on a consumer survey in Virginia to determine knowledge of the One-Way bottle and attitudes toward it. The Subcommittee approved plans to follow this with a survey at the conclusion of the program to determine progress. It was also planned to obtain distribution and sales data from all possible sources.

4. Syracuse Study.

The representatives of Kenyon & Eckhardt then presented parts I, II and III of their Syracuse Beer Container Study, to wit:

- I. Story Audits of Selected Brands of Beer
- II. The Dealers Survey
- III. The Brewer and Distributor Survey

Copies were furnished to Subcommittee members, and a discussion followed. As soon as the consumer survey is analyzed, a thorough marketing study will be made by Kenyon & Eckhardt and full recommendations will be submitted to the Subcommittee.

5. Adjournment.

There being no further business the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 490]

GOVERNMENT'S EXHIBIT 115

Minutes of Meeting

Beer Bottle Subcommittee
GCMC Conference Room
New York, New York

March 26, 1957

Present:

R. E. Delaplane, Chairman—Owens-Illinois Glass Company, J. E. Bellinger—Ball Brothers Company, Inc., J. A. Giddings—Brockway Glass Company, Inc., Lyle Harder—Thatcher Glass Manufacturing Company, Inc., E. M. Lawrence—Anchor Hocking Glass Corporation.

Absent:

M. J. Jones—Obear-Nester Glass Company, R. M. Ulmer—Armstrong Cork Company.

Others Present:

Bush Barnum—GCMI, R. L. Cheney—GCMI, D. L. Keys—Kenyon & Eckhardt, Inc., Eric Marder—Kenyon & Eckhardt, Inc., R. B. Shirey—Kenyon & Eckhardt, Inc.

1. Call to Order.

The meeting was called to order by the Chairman, Mr. R. E. Delaplane. Mr. Cheney served as secretary.

2. Minutes of the Previous Meeting.

Upon motion made, seconded, and unanimously carried, the minutes of the July 26, 1956, meeting were approved.

3. Syracuse Beer Studies.

The meeting was turned over to R. B. Shirey of Kenyon & Eckhardt, Inc., GCMI account supervisor. He in turn introduced Eric Marder of the agency's research staff. Mr. Marder presented a summary of the beer studies conducted among 581 Syracuse consumers in the late summer of 1956. This constituted part four of the agency's comprehensive Syracuse Beer Container Study. It dealt with consumer acceptances of beer containers, consumer size preferences, consumer appeals, and consumer prejudices about beer containers.

Following Mr. Marder's presentation, Mr. Shirey and Douglas Keys, GCMI account executive, presented the agency's analysis and recommendation. In summary, Kenyon & Eckhardt does not recommend proceeding with proposed marketing tests in the Syracuse area, in the absence of a favorable economic relationship at the retail level, such as now exists in Maryland and Virginia. Following discussion, members of the Beer Bottle Subcommittee unanimously approved this viewpoint:

[fol. 491] 4. Virginia Beer Bottle Program.

Mr. Cheney reported to the Subcommittee in detail on the results of the program in behalf of one-ways conducted in three Virginia markets from August through December, 1956. Following discussion, a motion was made, seconded and unanimously carried that the agency submit recommendations for an advertising program in Virginia to cost approximately \$40,000, major emphasis to be placed on the

important beer-consuming holidays—Decoration Day, Independence Day and Labor Day.

5. Vermont Legislative Situation.

Mr. Cheney reported on the current situation regarding the proposed legislative ban of one-way beer bottles in the state of Vermont.

6. New Business.

No new business was brought before the Subcommittee.

7. Next Meeting.

No date for the next meeting was established.

8. Adjournment.

There being no further business, Chairman Delaplane declared the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 492]

GOVERNMENT'S EXHIBIT 116

Minutes of Meeting

Beer Bottle Subcommittee
GCMC Conference Room
New York, New York

August 21, 1958

Present:

E. M. Lawrence, Chairman—Anchor Hocking Glass Corporation, A. G. Beltz—Brockway Glass Company, Inc., H. C. Crago—Hazel-Atlas Glass Division, Continental Can Company, Inc., K. Kevin Hepp—Owens-Illinois Glass Company, P. S. Holmquest—Thatcher Glass Manufacturing Company, Inc., R. M. Ulmer—Armstrong Cork Company.

Absent:

M. J. Jones—Obear-Nester Glass Company, G. W. Meyer—Glenshaw Glass Company, Inc.

Others Present:

J. B. Carroll—GCMI, R. L. Cheney—GCMI, K. M. Hay—Ball Brothers Company, Inc., J. P. Moore—Metro Glass Company, Inc.

1. Call to Order.

The meeting was called to order by Chairman E. M. Lawrence.

2. Minutes of the Previous Meeting.

Upon motion made by Mr. Holmquest, seconded by Mr. Beltz and unanimously carried, the minutes of the March 26, 1957 meeting were approved.

3. Beer Pilot Study. Institute for Motivational Research, Inc.

Mr. Cheney presented a report on the findings of the Institute for Motivational Research, Inc., in its pilot study concerning beer distributors' views on beer packaging—one-way bottles and returnables as compared with cans. This packaging study was carried on through personal depth interviews with 60 beer distributors selected on a regional basis. It was the initial phase of a proposed five phase study which will include, in addition to distributors: brewers, drivers, retailers and consumers.

Copies of this report have been furnished to all members of this Subcommittee.

[fol. 493]

B

Total Advertising & Promotion

	1958 Budget	1959 Budget	Amount (over) or under 1958
Advertising and Promotion (Kenyon & Eckhardt, Inc.)	\$1,208,178	\$1,250,000	(\$41,822)
Publicity, General	80,000	80,650	(650)
Milk Bottle Promotional Program	48,000	48,000	
Total	\$1,336,178	\$1,378,650	(\$42,472)

[fol. 494] 4. Further Studies Approved.

The Institute for Motivational Research recommended they continue with the remaining four phases of the study after which a final analysis will be prepared.

They also recommended that a special side study be made in the Pittsburgh and Toledo markets to enable them to evaluate certain new beer bottle innovations introduced there. In this particular study all levels of the trade will be studied simultaneously.

Following a general discussion concerning the advisability of entering into this special study, upon motion duly made, seconded and unanimously carried, it was

Resolved, That the Institute for Motivational Research, Inc. be authorized to conduct special beer packaging studies in the Pittsburgh and Toledo beer markets at the cost of approximately \$5,000, in addition to completing the original nationwide study.

(After the close of the meeting Mr. Cheney determined that the entire five phase study and the special study on Pittsburgh and Toledo beer markets can be completed and reported to the Beer Bottle Subcommittee at its next scheduled meeting, Wednesday, October 29.)

5. Review of Package Beer Statistics.

The Subcommittee received several reports on package beer data, including statistics for the first half of 1958, and a special study of trends in one-way bottles vs. cans.

6. New Business. Promotion Participation—Pittsburgh.

At the suggestion of one member, the Subcommittee considered the advisability of lending advertising support to the new beer bottle in the Pittsburgh area. While it was the consensus that there was not yet sufficient evidence that the Pittsburgh situation presented the proper opportunity for launching a beer bottle promotion, the Subcommittee unanimously adopted the following resolution:

Resolved, That this Subcommittee feels that in the near future serious consideration should be given to a carefully planned and executed aggressive promo-

tional campaign in behalf of the no-deposit glass beer bottle.

[fol. 495] 7. Next Meeting.

The Subcommittee elected to meet Wednesday, October 29, at the GCMI headquarters in New York to receive the complete report on the motivational studies.

8. Adjournment.

There being no further business, Chairman Lawrence declared the meeting adjourned.

Respectfully submitted, R. L. Cheney, Secretary.

[fol. 496] GOVERNMENT'S EXHIBIT 117

Technical Committee on Glass Packed Products
Special Subcommittee on Nuclear Tests Semi-Annual
Report of Activities For the Period May to September 1957.

To the Board of Trustees
of Glass Container Manufacturers Institute

Mid-1957 the Federal Civil Defense Administration released the official, and presumably the final, report on the "Effects of Nuclear Explosions on Canned Foods". The term "canned foods" as used throughout the report refers to foods packed in glass and tin containers. Earlier in the year interim reports were issued on fruits, vegetables and juices, and a separate report on commercially packaged beverages. These reports and their conclusions are of great significance to glass container and closure manufacturers, their packer and bottler customers, and the American public. Certainly the serviceability of glass as a protective package was clearly demonstrated.

The tests were conducted in cooperation with the Atomic Energy Commission at the Nevada Test Site during the forepart of 1955. Some 60 different types of foods representing these most commonly found in homes were selected for test purposes. Altogether about 25,000 individual sample packages were involved. Among the glass packed items

were a range of fruits, vegetables, meats, fish, and baby foods. Other glass packed items comprised drugs and beverages, the latter including soft drinks and beer. Briefly, the principal objectives of the test were to determine the effect of extreme heat, pressure changes and the various types of radioactivity that are generated by nuclear explosion on containers and the products in them.

The official report, which was sent by the Subcommittee to all members under date of August 16, 1957, contains a great deal of important information heretofore unavailable. The findings set forth in the Summary are most gratifying to our industry. Of particular interest are the two following conclusions quoted from the Summary Section:

"Canned foods in unbroken tin or glass containers subjected to an atomic blast are suitable for immediate use when located in shelters or other structures effective in protecting personnel against lethal radiation or blast effects. Their induced radioactivity is not at a dangerous level, and any container failure is readily discernible. Canned foods that might be recoverable from critically exposed areas within the zone of complete destruction could be pressed into emergency service after three or four days."

"Even in the case of an above ground shelter so badly shattered that no personnel could have survived crushing or the lethal doses of radiation, 67 per cent. of the canned foods were recovered in usable condition."

Note: Canned foods includes glass packed products.

Since this likely may be the final report of the Subcommittee appointed by the Trustees on May 14, 1954 to handle participation of GCMI in the Nuclear Test Program, it seems appropriate to include a short bibliography:

- [fol. 497] 1. Semi-Annual Activities Reports to the GCMI Board of Trustees; Special Subcommittee on Nuclear Tests; May 1955, November 1955 and May 1956.
2. Federal Civil Defense Administration-Atomic Energy Commission, Reports "Operation Teapot" February-May 1955:

- (a) Program 32—"Exposure of Foods and Foodstuffs to Nuclear Explosions"—Report WT-1222.
- (b) Project 32.2a—"The Effect of Nuclear Explosions on Commercially Packaged Beverages"—Report WT-1213.
- (c) Project 32.2—"Effects of Nuclear Explosions on Canned Foods"—Report WT-1212. (Final Report)

Members of this Subcommittee are:

Alex Hart, Chairman—Anchor Hocking Glass Corporation
 H. A. Barnby—Owens-Illinois Glass Company
 J. M. Sharf—Armstrong Cork Company
 P. O'C. White—White Cap Company
 H. W. Kuni—GCM

Messrs. Sharf and Kuni handled all arrangements in connection with the program and participated in the tests at Yucca Flats and Mercury, Nevada.

Respectfully submitted, Alex Hart, Chairman.

[fol. 498] GOVERNMENT'S EXHIBIT 118

Committee on Market Research and Promotion
 Semi-Annual Report of Activities
 For the Period November 1955 to May 1956

To the Board of Trustees of
 Glass Container Manufacturers Institute

The personnel of the Committee is as follows:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Company, Inc., J. S. Algeo—Hazel-Atlas Glass Company, E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company, W. V. Fisher—Anchor Hocking Glass Corporation,

T. S. Gallagher—Crown Cork & Seal Company, Inc., J. S. Heusler—Maryland Glass Corporation, G. A. Mengler—Brockway Glass Company, Inc., P. O'C. White—White Cap Company.

R. L. Cheney is Secretary.

The Task Committee consists of:

R. H. Hetzel, Chairman—Armstrong Cork Company, J. S. Algeo—Hazel-Atlas Glass Company, S. F. Davis—Owens-Illinois Glass Company, S. B. DeMerell—Anchor Hocking Glass Corporation, W. H. Ellis—The Lamb Glass Company, J. H. Funkey—Carr-Lowrey Glass Company, J. A. Giddings—Brockway Glass Company, Inc., Kenneth M. Hay—Ball Brothers Company, Inc., P. I. Heusler, Jr.—Maryland Glass Corporation, P. S. Holmquest—Thatcher Glass Manufacturing Company, Inc., R. H. Roper, Jr.—Laurens Glass Works, Inc.

R. L. Cheney is Secretary.

The roster of the West Coast Subcommittee is:

K. C. White, Chairman—Owens-Illinois Glass Company, E. L. Casey—Hazel-Atlas Glass Company, R. H. Dallas—Maywood Glass Company, J. W. Donaldson—Ball Brothers Company, Inc., J. B. Miller—Thatcher Glass Manufacturing Company, Inc., William Simpkins—Letchford-Marble Glass Company, E. B. Spread—Crown Cork & Seal Company, Inc.

Frank H. Wright is Secretary.

Committee Meetings.

Since the last report, one meeting of the Committee has been held:

November 28, 1955, at The Fontainebleau, Miami Beach, Florida.

[fol. 499] Since the last report, one meeting of the Task Committee has been held:

March 21, 1956, at GCM headquaters.

GCMI's Market Research and Promotion Program divides into four major parts:

I

Advertising and Promotion

II

Public Information

III

Member Information

IV

Market Research

Following are highlights of Market Research and Promotion Division activities in each of these four major areas for the six-month period ending in May, 1956:

I

Advertising and Promotion

Designed to increase consumer preference for glass containers, the industry's long-range advertising and promotion effort was extended during the past six months to include:

Magazines: From February through May, fifteen full-page, four-color advertisements featuring glass containers appeared in Family Circle, Good Housekeeping, Ladies' Home Journal, McCall's or Woman's Day. Subjects of the first four ads in the 1956 series were: February—Instant Coffee; March—Fruits for Salad; April—Worksavers; May—Milk. Six additional ads covering the period June through November have also been prepared and cleared. Total 1956 insertions: forty. Combined circulations of the five consumer magazines on the 1956 schedule total 20,676,000. Estimated average monthly readership: 31,870,000.

The basic media choice—women's magazines—still constitutes, in the opinion of your Committee, the most economical means of presenting the advantages of glass containers to maximum consumer audiences at the national level. Mo-

mentum gained in 1955 has been speeded during the current period, and it is believed that it will continue through the current year with appreciable results in increased consumer demand for glass-packed products throughout the nation.

Canadian Program: At the request of the Canadian members of GCMI, who have supplied the funds for it, the Canadian women's magazine *Chatelaine* has been added to the GCMI schedule. Six of the 1956 advertisements will appear from April through November in *Chatelaine*, circulation of which is 407,000.

Trade Publications: Recognizing the great importance of retail trade attitudes in the free flow of glass containers from manufacturer to consumer, your Committee has, from [for 500] the inception of the current program, made every effort to work out a series of strong advertisements for incorporation in trade papers read by members of the retail food industry. Problems are manifest, and need no elaboration here. Suffice it to say that the 1956 trade program got underway in April issues of seven food journals—combined circulation of which is 316,000—as follows: *Chain Store Age*, *Cooperative Groups Magazine*, *Food Topics*, *Nargus Bulletin*, *Progressive Grocer*, *Supermarket Merchandising*, *Supermarket News*, and *Voluntary and Cooperative Groups Magazine*. Most are in four-color. Additional ads are scheduled—on a staggered basis—from May through September, making a total of six trade ads in each publication, or a total of 42 ads, in the 1956 trade series.

Glass Packer: The leading trade paper in the glass packaging field, *Glass Packer*, has a circulation of some 6,000 among packaging consultants, users of glass containers, manufacturers associations, and allied industries. Your Committee felt it advisable to use this publication on a continuing basis as part of the GCMI trade program. Double-page advertisements appeared from January through May, and are scheduled monthly through the year-end.

Labor Papers: To reach a large and influential segment of the American consuming public, it was decided to include nine labor publications in the 1956 schedule as follows: *American Teacher*, *American Teacher Magazine*, *Boilermakers Journal*, *Locomotive Fireman*, *Maintenance Way Journal*, *Public Employee*, *Railway Carriers Journal*, *Union Postal Clerk*, and *Motorman Conductor*. Combined

circulation: 1,135,000. Black and white ads appeared on a staggered basis in February, April and May issues, and are scheduled on a monthly basis thereafter through November. Starting in May, this will be supplemented by 32 regional labor papers with a combined circulation of 1,089,000.

Local Program: A special advertising effort promoting glass bottles for soft drinks in the Los Angeles area is detailed in the report of the West Coast Subcommittee.

Merchandising the Advertising: Every ad in the 1956 series is extensively merchandised. While space does not permit a detailed report, major projects include: 1) mailing of special merchandising material by each of the consumer magazines on the schedule, plus their regular monthly merchandising services; 2) mailing of personally-addressed, hand-typed letters—accompanied by a proof—to industry leaders in each field, i.e. coffee, fruit, household cleaners, milk; 3) Glass Container Sales letters sent each month to 3,500 executives supervising buying for 28,000 supermarkets—as well as to packers, distributors and associations in each end-use area; 4) mailing of a milk promotion packet to 8,500 milk dealers in conjunction with the May ad; 5) mailing of regular releases and glossy prints of ads to interested trade papers in each field.

Home Economics Activities: The story of glass containers is told to consumers by qualified members of the Agency publicity staff on a continuing basis in many ways. Included are: 1) a matted feature which goes to 1,500 weekly and small daily newspapers once a month; 2) releases and photographs to 400 food and women's page editors of major daily newspapers once a month. (Combined circulation of these papers totals some 150,000,000. Material is based upon the end-use product featured in the corresponding national magazine advertisement); 3) a monthly release to 500 women radio commentators; 4) scripts to 200 television commentators once a month; 5) national magazines, newspaper syndicates and the labor press are contacted regularly in an effort to obtain editorial space for glass containers. First quarter results of this activity are gratifying, and a report will shortly be submitted to the membership.

[fol. 501] Preparation of a slide film designed for domestic science classes in those 19,000 schools which have projectors for this type of visual education is in progress.

II

Public Information

Motion Picture: Major effort in the GCMI public information program throughout the past six months has been the preparation of a 25-minute, 16-mm, color film on glass containers. Title: "The Story Behind A Bottle." An extensive undertaking, this project has been in work since August of 1955. At this writing, it is anticipated that the initial showing to members will be made at the mid-May membership meeting at White Sulphur Springs. Distribution plans will be outlined at that time.

GCMI Glass Container Collection: With the aid of Helen McKearin Powers, a collection of authentic, old glass containers was assembled from the notable collection of Mrs. Powers' father, George S. McKearin. It is now on display in the reception room at GCMI headquarters. The collection has aroused considerable interest, and has many promotional applications. A printed folder describing the collection was mailed to members on March 29th, 1956.

"The History of Glass Containers": A second printing of "History" was made in February. A total of 16 GCMI member companies ordered 11,000 copies of the second edition. Corporate titles were imprinted on the cover and title page in each instance. Combining first and second prints, some 66,000 copies of this green-covered booklet have now been placed in member hands. GCMI has placed 17,000 copies with opinion makers.

"The Story of Glass Containers": This 16-page educational unit was originally offered in the September, 1955, issue of Grade Teacher Magazine. It was re-offered via a full-page advertisement in the February, 1956, issue of Grade Teacher. Copies distributed to date total nearly 400,000. In the past six months, distribution has been at the rate of 8,000 a week or 1,500 a day—Monday through Friday. The National Science Teachers Association—a division of National Education Association—mailed 10,000 copies to its membership for classroom use. Considerable editorial mention—reported to members on February 17, 1956—has accrued.

"The Glass Container Industry": This recap of the glass container industry, incorporating background statistics and

accompanied by charts, was originally prepared through 1953. It was updated for 1954. It is currently being reworked to include 1955. Copies will be sent to members upon completion. It will also be used, as in the past, over a twelve-month period as a ready means of supplying writers, editors and others interested with favorable, factual information about the glass container industry.

Releases: During the six-month period, various releases were distributed by GCMI to wire services, daily newspapers and trade papers. Among them: New Peaks for Glass Container Shipments Predicted at GCMI Meeting In Miami—November 29, 1955; A. J. Martin Joins GCMI As Labor Relations Director—December 16, 1955; Glass Container Shipments Reach All-Time Peak in 1955—January 25, 1956; Glass Container Industry Signs New Wage Agreements For 1956-57—February 27, 1956.

[fol. 502] **Requests for Information:** Members, editors, educators, students and members of the general public approached GCMI by telephone, letter and in person in increasing numbers during the past six months with requests for a wide variety of information. The national advertising coupled with the increasing distribution of literature and releases, has given more people a name and an address to call or write, and they are doing so. These inquiries have, in each instance, been handled by the Market Research and Promotion Division to the best of its ability.

Talks to Bottlers and Others: Leading off with a speech at the annual meeting of the American Bottlers of Carbonated Beverages in Miami on November 16, 1955, R. L. Cheney subsequently addressed three state bottling associations as follows: Missouri Bottlers Association at St. Louis on December 6, 1955; California-Nevada Manufacturers of Carbonated Beverages at San Francisco on February 14, 1956; the Arkansas Bottlers Association at Little Rock, Arkansas, on February 20, 1956.

On February 23, 1956, Mr. Cheney spoke to the New York Canners & Freezers Association at Buffalo. On April 18, 1956, Mr. Cheney participated in the Fifth Annual Package Design Seminar conducted by New York University.

III

Member Information

In addition to advance mailings of most of the foregoing, the following material has been supplied to GCMI members on a continuing basis:

Advertising and Promotion Bulletins: During the course of the six-month period, 40 mailings were sent to some 250 executives of member companies reporting details of the Advertising and Promotion Program. While it is not possible to recap full details in the course of this brief report, members were advised regularly on all developments in the M R & P program as they occurred.

Container Capsules: A digest of current news developments culled from some 131 trade papers and daily newspapers went forth to GCMI members twice a month throughout the six-month period.

Reprints: Complete reprints of significant editorial comment were mailed to members at the rate of about three a week during the past six months.

IV

Marketing Research

Market Survey: The results of the 1955 nationwide consumer attitude survey, which were reported to the semi-annual membership meeting on December 1, 1955, have been further analyzed to develop information for our advertising agency on magazine readership and notation of the GCMI advertising messages. The summary report has been put in printed form, available to members on a library loan basis.

Further breakdowns revealing special opportunities and problems of the glass container industry, together with regional trends, have been made and will be reported to the membership at the annual meeting in May. These will later be issued in printed form to members.

[fol. 503]. A special report on consumer attitudes in the West, together with data covering sales of baby foods and soft drinks in the Los Angeles area derived from continuing store audits there, were given at the annual meetings of the West Coast Subcommittees in March.

Plans are being prepared by the Market Research and Promotion Division, the research department of Kenyon & Eckhardt, and Ford Sammis for the 1956 consumer attitude survey to be conducted in August and reported at the November semi-annual meeting.

Special Studies: A field check has been made of the progress of market tests on new metal containers for soluble coffee, and an investigation made of potential markets for glass containers for liquid detergents, including heavy duty detergents.

Bibliographies and reprints of technical articles bringing out the relative merits of glass containers and other packaging are being assembled.

Retail Tests: A pilot study will have been completed on April 18th, in a large supermarket in the New York City area covering turnover, handling costs, sales and profits per square foot, breakage and damage losses, and related information on products packed in glass compared with those in other containers. The purpose was to establish a series of benchmarks for practical merchandising and sales ideas designed to increase the sale of products packaged in glass. Possibilities uncovered by this study will be tested in retail outlets in various parts of the country.

Negotiations are underway with a consulting organization in the supermarket operation field to develop the means for conducting these broader tests.

Beer Bottle Studies: The beer-bottle studies being made by Kenyon & Eckhardt, Inc. will shortly be completed. (See report of Beer Bottle Subcommittee)

Product Research: Discussions are being held with two leading product research and design organizations to determine if their techniques can help in developing ways and means for expanding the sales of such items as One-Way beer bottles.

West Coast Subcommittee Activities.

Since submission of the November, 1955, report, Subcommittee meetings have been held December 15, 1955; February 2, 1956; February 3, 1956; February 14, 1956; and March 13, 1956.

The Subcommittee formulated a questionnaire designed to accurately evaluate the impact of the three-month local

promotion carried on in the Los Angeles market during the months of July, August and September, 1955, directed towards soft drinks in glass bottles. This questionnaire was sent to all bottlers in the Los Angeles area, and the replies correlated and tabulated in the West Coast GCMI office and distributed to the Subcommittee for study and action.

The decision was reached that a continuing local radio and TV spot program in that market during 1956 was required to realize full value from the 1955 effort and to keep the favorable trend of soft drink packaging in glass bottles against any aggressive activity on behalf of various can manufacturers and soft drink manufacturers towards packaging soft drinks in metal containers.

[fol. 504] As funds to carry out this program were not available from the national Market Research and Promotion budget, and the problem was felt to be of extreme importance, not only to the glass container industry on the West Coast, but nationally, the Subcommittee was unanimous in resolving that the companies operating plants within the State of California would assess themselves to finance a 1956 program.

At the time of Mr. R. L. Cheney's address to the California-Nevada Manufacturers of Carbonated Beverages, February 14, 1956, the Subcommittee had the pleasure of discussing the 1956 advertising program and various problems particular to the West Coast, presenting numerous facts and figures to Mr. Cheney.

A request directed to the Subcommittee by the CNMCB to contribute one half of the cost of a continuing advertising program for returnable bottles in the West Coast trade journals, was not given favorable consideration, as the Subcommittee was of the opinion that the basic problem was one of glass versus tin, and that effort directed at consumer level would accomplish the most favorable results.

Continued increases in glass-packed baby foods on the Coast were noted in 1955, and the Subcommittee is continuing its careful watch and study of this important and growing market.

With the advent of spring, the Subcommittee and Task Force for Public Education have stepped up activity directed to improve roadside litter conditions on the West Coast. At all times close liaison and cooperation is main-

tained with the California State Chamber of Commerce, and the West Coast Manager of GCMI, under the direction of the Subcommittee and Task Force, keeps fully advised of all matters concerning this problem, reporting them immediately to the Subcommittee.

Respectfully submitted, Franklin B. Pollock, Chairman.

[Vol. 505]

GOVERNMENT'S EXHIBIT 119

Committee on Market Research and Promotion

Semi-Annual Report of Activities
For the Period May 1956 to November 1956

To the Board of Trustees
of

Glass Container Manufacturers Institute

The personnel of the Committee is as follows:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Company, Inc., J. A. Algeo—Hazel-Atlas Glass Company, E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company, W. V. Fisher—Anchor Hocking Glass Corporation, J. M. Foster—Foster-Forbes Glass Company, T. S. Gallagher—Crown Cork & Seal Company, Inc., J. S. Heuisler—Maryland Glass Corporation, G. A. Mengle—Brockway Glass Company, Inc., P. O'C. White—White Cap Company. R. L. Cheney is Secretary.

The Task Committee consists of:

R. H. Hetzel, Chairman—Armstrong Cork Company, S. F. Davis—Owens-Illinois Glass Company, S. B. DeMerell—Anchor Hocking Glass Corporation, W. H. Ellis—The Lamb Glass Company, J. H. Funkey—Carr-Lowrey Glass Company, J. A. Giddings—Brockway Glass Company, Inc., P. I. Heuisler, Jr.—Maryland Glass Corporation, P. S. Holmquest—Thatcher Glass Manufacturing Company, Inc., J. H. Maiesky—Hazel-Atlas Glass Company, G. F. Rieman

—Ball Brothers Company, Inc., R. H. Roper, Jr.—Laurens Glass Works, Inc.

R. L. Cheney is Secretary.

The roster of the West Coast Subcommittee is:

K. C. White, Chairman—Owens-Illinois Glass Company, E. L. Casey—Hazel-Atlas Glass Company, R. H. Dallas—Maywood Glass Company, J. W. Donaldson—Ball Brothers Company, Inc., J. B. Miller—Thatcher Glass Manufacturing Company, Inc., William Simkins—Litchford-Marble Glass Company, E. B. Spread—Crown Cork & Seal Company, Inc. Frank H. Wright is Secretary.

Committee Meetings.

Since the last report, two meetings of the Committee have been held:

[fol. 506] May 20, 1956, at The Greenbrier, White Sulphur Springs, West Virginia.

September 26, 1956, at GCMI headquarters.

Since the last report, one meeting of the Task Committee has been held:

October 4, 1956, at GCMI headquarters.

One meeting of the Advertising Advisory Group has been held:

September 18, 1956, at GCMI headquarters.

GCMI's Market Research and Promotion Program divides into four major parts:

I

Advertising and Promotion

II

Public Information

III

Member Information

IV

Market Research

Following are highlights of Market Research and Promotion Division activities in each of these four major areas for the six-month period ending in November, 1956:

I

Advertising and Promotion

Designed to increase consumer preference for glass containers, the industry's long-range advertising and promotion effort was extended during the past six months to include:

Magazines: From May through November, twenty-five full-page, four-color advertisements featuring glass containers appeared in Family Circle, Good Housekeeping, Ladies' Home Journal, McCall's or Woman's Day. Subjects of the final six ads in the 1956 series were: June—Soft Drinks; July—Beer; August—Soft Drinks; September—Baby Food; October—Juices; and November—Cosmetics. Total 1956 insertions: forty. Combined circulation of the five consumer magazines on the 1956 schedule totals 20,676,000. Estimated average monthly readership: 31,870,000. The basic media choice—women's magazines—still constitutes, in the opinion of your Committee, the most economical means of presenting the advantages of glass containers to maximum consumer audiences at the national level. While any effort to change consumer attitudes on a national scale is necessarily long-range, it is the belief of your Committee that tangible progress has been made since the inception of the GCMI Program in May of 1955, and that further gains in the sale of glass-packed products will be scored in the months and years ahead.

[fol. 507] **Canadian Program:** At the request of the Canadian members of GCMI, who supplied the necessary funds, the Canadian women's magazine Chatelaine was added to the GCMI schedule. Six of the 1956 advertisements appeared from April through November in Chatelaine, circulation of which is 407,000.

Trade Publications: Recognizing the great importance of retail trade attitudes in the free flow of glass containers from manufacturer to consumer, your Committee has, from the inception of the current program, made every effort to

work out a series of strong advertisements for incorporation in trade papers read by members of the retail food industry. The 1956 trade program got underway in April issues of seven food journals—combined circulation of which is 316,000—as follows: Chain Store Age, Cooperative Groups Magazine, Food Topics, Nargus Bulletin, Progressive Grocer, Supermarket Merchandising, Supermarket News, and Voluntary and Cooperative Groups Magazine. Most ads are in four-color. Six ads appeared in each publication, from April through September, 1956. Total insertions: 42.

Glass Packer: The leading trade paper in the glass packaging field, Glass Packer, has a circulation of some 6,000 among packaging consultants, users of glass containers, manufacturers associations, and allied industries. Your Committee felt it advisable to use this publication on a continuing basis as part of the GCMI trade program. Double-page advertisements are scheduled monthly throughout 1956.

Labor Papers: Nine national labor publications are included in the 1956 schedule as follows: American Teacher, American Teacher Magazine, Boilermakers Journal, Locomotive Fireman, Maintenance Way Journal, Public Employee, Railway Carman's Journal, Union Postal Clerk, and Motorman Conductor. Combined circulation: 1,135,000. Black and white ads appeared on a staggered basis from February through November, 1956. Total insertions: 47. Starting in May, this schedule was supplemented by 32 regional labor papers with a combined circulation of 1,089,000. Total regional insertions: 105.

Local Programs: Special advertising effort promoting glass bottles for soft drinks in the Los Angeles area and glass bottles for beer in the State of Virginia are detailed in the report of the West Coast Subcommittee and the Beer Bottle Subcommittee, respectively.

Merchandising the Advertising: Every ad in the 1956 series is extensively merchandised. While space does not permit a detailed report, major projects include: 1) mailing of special merchandising material by consumer magazines on the schedule; 2) mailing of personally-addressed, hand-typed letters—accompanied by a proof—to leading packers; 3) Glass Container Sales letters sent each month to 3,500

executives supervising buying for 28,000 supermarkets—as well as to packers, distributors and associations in each end-use area; 4) mailing of regular releases and glossy prints of ads to interested trade papers in each field.

Home Economics Activities: The story of glass containers is told to consumers by qualified members of the Agency publicity staff on a continuing basis in many ways. Included are: 1) a matted feature which goes to 1,500 weekly and small daily newspapers once a month; 2) releases and photographs to 400 food and women's page editors of major daily newspapers; 3) releases to women radio commentators; 4) scripts to television commentators once a month; 5) national magazines, newspaper syndicates and the labor press are contacted regularly in an effort to obtain editorial space for glass containers.

[fol. 508] Preparation of a slide film designed for domestic science classes in those 19,000 schools which have projectors for this type of visual education is nearing completion.

II

Public Information

"The Story Behind A Bottle": A working print of this 24-minute motion picture was shown members at The Greenbrier on May 22, 1956. Twenty-eight member companies subsequently ordered a total of thirty-one 16-mm prints—which were delivered on or before September 20. Previews for press, etc., were held on September 13 and 14, and on October 11. Promotional material was prepared and distributed. Reaction has been consistently favorable. The film was telecast over an American Broadcasting Company coast-to-coast network on September 27, shown over the network's New York flagship station—WABC—on October 14. WRCA, key station of the National Broadcasting Company, showed the film on November 4. Numerous other screenings have been scheduled, including one at the ABCB convention in Cleveland on November 15. Plans for extensive national distribution in the months ahead are currently in work.

"The Story of Glass Containers": Demand from teachers for this 16-page educational unit continues to exceed optimistic estimates. In the four-week period September 4

through 28, 1956, a total of 218,000 copies were requested. Over 700,000 copies of the booklet have been distributed since the booklet was first introduced in September of 1953. Unsolicited comment from teachers has been highly gratifying.

"The History of Glass Containers": Member companies continue to order copies of this 24-page booklet with their corporate name imprinted on cover and title page. A third printing was done in September. Over 75,000 copies have been placed in member hands to date. Some 20,000 additional copies have been distributed from GCMI headquarters.

"The Glass Container Industry": This recap of the glass container industry, incorporating background statistics and accompanied by charts, has been updated annually since 1953. The version covering data for 1955 was distributed to members in early June and it is used at GCMI headquarters on a continuing basis to provide those interested with factual information about the industry.

"The Evolution of the Glass Container Industry": Daniel J. James, professor of marketing, University of Arkansas, College of Business Administration, brought to our attention an independently-prepared treatise on the subject of glass containers. Professor James agreed to the incorporation of his material by GCMI in a 24-page booklet—subsequently made available to members and others.

Releases: During the six-month period, various releases were distributed by GCMI, to wire services, daily newspapers and trade papers. Among them: GCMI Semi-Annual Meeting Scheduled at White Sulphur Springs May 21-23—April 16, 1956; Instant Products Contribute to New Record Glass Shipments—June 6, 1956; New Peaks for Glass Container Shipments in 1960 Predicted at GCMI Meeting, May 22, 1956; William J. Green Named GCMI Trustee—September 19, 1956; Glass-Packed Food & Candy Dominate National Show—September 19, 1956; August Glass Container Shipments at All-Time Peak—September 24, 1956.

[fol. 509] Requests for Information: Members, editors, educators, students and members of the general public approach GCMI by telephone, letter and in person in increasing numbers during the past six months with requests

for a wide variety of information. These inquiries have, in each instance, been handled by the Market Research and Promotion Division to the best of its ability.

III

Member Information

In addition to advance mailings of most of the foregoing, the following material has been supplied to GCMI members on a continuing basis:

Advertising and Promotion Bulletins: During the course of the six-month period, 32 mailings were sent to some 200 executives of member companies reporting details of the Advertising and Promotion Program. While it is not possible to recap full details in the course of this brief report, members were advised regularly on all developments in the M R & P Program as they occurred.

Container Capsules: A digest of current news developments culled from some 131 trade papers and daily newspapers went forth to GCMI members twice a month throughout the six-month period.

Reprints: Complete reprints of significant editorial comment were mailed to members at the rate of about one a week during the past six months.

IV

Marketing Research

Market Survey: Field work for the third annual nationwide consumer attitude survey by Ford Sammis and Company was completed late in August. This year 4,000 women, 2,000 men and 1,000 retailers were interviewed in scientifically selected samples designed to give a true picture of overall attitudes toward glass containers and glass-packed products.

The results will be covered in a report by Mr. Sammis at the Semi-Annual meeting in Phoenix, and will later be available to members in printed form on a loan basis. Comparisons with 1954 and 1955 reports will reveal trends and that a number of new areas have been explored which should prove helpful to members and the Institute in planning future marketing activities.

Special Studies: To measure results of local programs, to obtain knowledge for the overall effort, and to gain needed information regarding special marketing problems, the following studies have been or are being made (by Ford Sammis and Company unless otherwise noted):

- (a) Beer bottle studies by Kenyon & Eckhardt (See Beer Bottle Subcommittee Report.)
- (b) Before-and-after consumer attitude surveys on beer packaging in Virginia.
- (c) Before-and-after consumer survey on soft drinks in the Los Angeles area.
- (d) Continuing store audits in the Los Angeles area covering soft drinks and baby foods.
- [fol. 510] (e) Consumer and dealer survey on milk packaging in the South Bend, Indiana, market, together with an analysis of published cost studies covering a dairy conversion to 100% paper operation there.
- (f) A study of potential markets for aseptically packed products in glass containers.
- (g) A special study of the market problems of the glass milk bottle.

Retail Studies: The report of the pilot study made in a large supermarket in the New York City area has been completed, and arrangements are pending with a group of stores in another area to test some of the findings on a broader scale before the end of the year. It is hoped to develop facts which can be used to further break down retailer resistance to glass-packed products.

West Coast Subcommittee Activities.

Since previously reporting, the West Coast Subcommittee have held meetings at the Sheraton-Palace Hotel, San Francisco, on March 13; the Sheraton-Town House, Los Angeles, on April 27; the Fairmont Hotel, San Francisco, on July 27; and the Sheraton-Town House, Los Angeles, on September 26, 1956.

The majority of the Subcommittee's work has been directed toward the 13-week radio spot program promoting

soft drinks in glass bottles in the Los Angeles market. This radio spot program, commencing June 25 and running through September 23, had in excess of 1,250 spots and achieved a high degree of saturation. Financing of the program was accomplished by the West Coast manufacturers assessing themselves \$20,000.00 in order to continue the program originally started in conjunction with the California-Nevada Manufacturers of Carbonated Beverages in 1954 and continued in 1955 by the Market Research and Promotion Department as one of the local promotions in the industry advertising and promotion program. Copy prepared by the Kenyon & Eckhardt, Inc. advertising agency contained mention of the one-way beverage bottle which was scheduled to be used in 25% of the broadcasts. During the last month of the program this percentage of one-way messages was substantially increased. The program was merchandised by mailings from the West Coast GOMI office to all members of the Southern California Bottlers Association and approximately 1,900 Class A markets in Los Angeles County. Point-of-sale material was provided to retail outlets who took advantage of its offer.

At the suggestion of the Subcommittee, the California manufacturers again purchased space for the GBBA's use in the Union Products and Services Show which enjoyed an attendance of over 150,000 visitors. Ten thousand copies of "The Story of Glass Containers" were distributed by the GBBA at this event.

Subcommittee interest in milk bottle sales and merchandising to creameries prompted suggestions which were forwarded to the Parent Committee for the modernization and redesign of the glass milk bottle and.

Action by the Subcommittee and Task Force for Public Information was taken relative to a communication sent to all beach concessionaires by the Director of Health and Sanitation of the City of Hermosa Beach, California, requesting that the concessionaires sell only canned soft drinks. The Subcommittee is pleased to report success in the handling of this matter.

[fol. 511] The Subcommittee is continuing to watch carefully baby food sales in glass which, on the Coast, are

continuing to capture an increasing percentage of that market.

Respectfully submitted, Franklin B. Pollock, Chairman.

[fol. 512] GOVERNMENT'S EXHIBIT 120

Committee on Market Research and Promotion

Semi-Annual Report of Activities
For the Period November 1956 to May 1957

To the Board of Trustees of
Glass Container Manufacturers Institute

The personnel of the Committee is as follows:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Company, Inc., E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company, W. V. Fisher—Anchor Hocking Glass Corporation, J. M. Foster—Foster-Forbes Glass Company, T. S. Gallagher—Crown Cork & Seal Company, Inc., J. S. Heuisler—Maryland Glass Corporation, G. A. Mengle—Brockway Glass Company, Inc., P. O'C. White—White Cap Company.

R. L. Cheney is Secretary.

The Task Committee consists of:

R. H. Hetzel, Chairman—Armstrong Cork Company, S. F. Davis—Owens-Illinois Glass Company, S. B. DeMerell—Anchor Hocking Glass Corporation, W. H. Ellis—The Lamb Glass Company, J. H. Funkey—Carr-Lowrey Glass Company, J. A. Giddings—Brockway Glass Company, Inc., P. I. Heuisler, Jr.—Maryland Glass Corporation, P. S. Holmquest—Thatcher Glass Manufacturing Company, Inc., J. H. Majesky—Hazel-Atlas Glass Division, Continental Can Company, Inc., G. F. Rieman—Ball Brothers Company, Inc., R. H. Roper, Jr.—Laurens Glass Works, Inc.

R. L. Cheney is Secretary.

The roster of the West Coast Subcommittee is:

K. C. White, Chairman—Owens-Illinois Glass Company,
E. L. Casey—Hazel-Atlas Glass Division, Continental Can
Company, Inc., R. H. Dallas—Maywood Glass Company, J.
W. Donaldson—Ball Brothers Company, Inc., J. B. Miller—
Thatcher Glass Manufacturing Company, Inc., William
Simkins—Latchford Glass Company, E. B. Spread—Crown
Cork & Seal Company, Inc.

Frank H. Wright is Secretary.

[fol. 513] Committee Meetings.

Since the last report, two meetings of the Committee have
been held:

November 12, 1956, at the Arizona Biltmore Hotel,
Phoenix, Arizona.

January 16, 1957, at GCMI headquarters.

Since the last report, one meeting of the Task Commit-
tee has been held:

January 15, 1957, at GCMI headquarters.

GCMI's Market Research and Promotion Program divides
into four major parts:

I

Advertising and Promotion

II

Public Information

III

Member Information

IV

Market Research

Following are highlights of Market Research and Promotion Division activities in each of these four major areas for the six-month period ending in May, 1957:

I

Advertising and Promotion

Magazines: From November through May, twenty-two full-page, four-color advertisements featuring glass containers appeared in Family Circle, Good Housekeeping, Ladies' Home Journal, McCall's and Woman's Day. Subjects of the first four ads in the 1957 series were: February-Beets; March-Pickles; April-Drugs; May-Milk. Combined circulation of the five consumer magazines on the 1957 schedule totals 20,199,000. Estimated average monthly readership: 32,004,000. The basic media choice—women's magazines—still constitutes, in the opinion of your Committee, the most economical means of presenting the advantages of glass containers to national audiences. While any effort to change consumer attitudes on a national scale is necessarily long-range, it is the belief of your Committee that tangible progress has been made since the inception of the GCMI program in May of 1955, and that Americans are becoming more glass container conscious with the passing of each month.

Canadian Program: The consumer campaign was continued into 1957 in Chatelaine. Canadian members again supplied the funds for this program. Four insertions appeared in Chatelaine—circulation of which is 407,000—between November and May.

Trade Publications: Recognizing the importance of retail trade attitudes in the free flow of glass containers from manufacturer to consumer, your Committee has, from the [fol. 514] inception of the current program, made every effort to work out a series of strong advertisements for incorporation in trade papers read by members of the retail food industry. The 1956-57 schedule includes the following seven food journals: Chain Store Age, Food Topics, Nargus Bulletin, Progressive Grocer, Supermarket Merchandising, Supermarket News, and Voluntary and Cooperative Groups Magazine. Combined circulation: 316,000. Most ads are in

four-color. Insertions from November through May totaled 21.

Glass Packer: The leading trade paper in the glass packaging field, Glass Packer, has a circulation of some 6,000 among packaging consultants, users of glass containers, manufacturers' associations, and allied industries. Your Committee felt it advisable to use this publication on a continuing basis as part of the GCMI trade program. Double-page advertisements are accordingly scheduled on a twelve-times-a-year basis.

Labor Papers: Ten national labor publications are included in the 1956-57 schedule as follows: American Teacher, American Teacher Magazine, Boilermakers Journal, Locomotive Fireman, Maintenance Way Journal, Public Employee, Railway Carmens Journal, Union Postal Clerk, Locomotive Engineers' Journal, and Railroad Telegrapher. Combined circulation: 1,083,000. Black and white ads appeared on a staggered basis from November of 1956 through May of 1957. Total insertions: 17. This schedule was supplemented by 42 regional labor papers—with a combined circulation of 1,276,000—on a staggered basis.

Local Programs: Special advertising efforts promoting glass bottles for soft drinks in the Los Angeles area and glass bottles for beer in the State of Virginia are detailed in the report of the West Coast Subcommittee and the Beer Bottle Subcommittee, respectively.

Merchandising the Advertising: Every ad is extensively merchandised. While space does not permit a detailed report, major projects include: 1) mailings of special merchandising material by consumer magazines on the schedule; 2) mailings by GCMI of personally-addressed, hand-typed letters—accompanied by a proof—to leading packers; 3) Glass Container Salesletters sent each month to 3,500 executives supervising buying for 28,000 supermarkets—as well as to packers, distributors and associations in each end-use area; 4) mailing of regular releases and glossy prints of ads to interested trade papers in each field.

Slide Film: Early in January, a 12-minute, 35mm color filmstrip entitled "Glass Containers In Today's Living" was sent to home economics teachers in 3,000 leading high

schools throughout the country. These filmstrips—with accompanying commentary describing the use of glass containers in the home—became part of the film library of the schools to which they were sent and will be used as a teaching aid year after year.

In-Store Promotion: Plans are under way for a special in-store promotion adaptable for voluntary or cooperative supermarket groups. If successful on a test basis, this in-store promotion will be extended in 1958 and thereafter as budgets permit.

II

Public Information

"The Story Behind A Bottle": From November through the end of March, 1957, this 24-minute, color film was televised 177 times on stations in 42 states to a total audience [fol. 515] conservatively estimated at 8,564,000. Had this free television time been purchased, it would have cost over \$30,000. Second, the film was shown during the same period to 698 groups in 48 states. Included were: Business organizations, colleges and universities, church groups, women's clubs, PTA's, Rotary and Kiwanis Clubs, schools, public libraries, etc. Third, thirty GCMI member companies own one or more prints of the film. These members report that their prints are also being shown regularly both on TV stations and to local groups. Fourth, ten prints are kept in steady circulation from GCMI headquarters. The number of people who see the film each month thus totals 1,725,000. This breaks down to almost half a million people per week, and to an audience of 86,250 people every business day of every week.

"Glass Containers—1956": According to present schedules, a booklet incorporating information pieces heretofore issued separately will be ready early in May. Included in the new 48-page booklet will be an up-dated version of the article previously called "The Glass Container Industry," up-dated charts, "Glass Container Shipments, 1928-1956," "Sources of Information on Glass—Glassmaking and Glass Containers," a list of GCMI staff members, and so on. This basic industry round-up will be distributed to GCMI member companies, to members of the working press, to opinion

makers, to correspondents and to others interested during the next twelve months.

Photos: During the past six months GCMI has been building a photographic library. Now in a workable file are 80 glass container production photographs and 35 pictures of finished glass containers. Some have already been placed with news and trade paper editors. Others have been used in booklets. Plans are to extend this basic collection in the months ahead.

"The Story of Glass Containers": Requests from teachers for copies of this 16-page educational booklet continue to arrive at GCMI headquarters in every mail. Over 800,000 copies of the booklet have been distributed during the 1955-56 and the 1956-57 school terms.

"The History of Glass Containers": Member companies continue to order copies of this 24-page booklet with their corporate titles imprinted on cover and title page. Over 85,000 copies have been requested by members to date. Some 25,000 copies have been distributed to opinion makers, correspondents and others by GCMI.

Releases: During the six-month period, various releases were distributed by GCMI, to wire services, daily newspapers and trade papers. Among them: GCMI Semi-Annual Meeting Scheduled in Phoenix November 12 through 15—October 12, 1956; Spices and Herbs In Glass Contribute to Growth Market—October 16, 1956; GCMI Exhibiting Old Jars and Bottles—October 24, 1956; New Peaks for Glass Container Shipments Predicted at GCMI Meeting in Phoenix—November 9, 1956; Million-Dollar-Plus Ad and Promotion Campaign Mapped for Glass Containers—November 14, 1956; 250 Year Old Beer Bottles—December 3, 1956; Instant Tea In Glass Jars Contributes to New Market—January 7, 1957; GCMI Packaging Research Lab Moved to Lansing, Michigan—January 18, 1957; Glass Container Shipments Reach All-Time Peak in 1956—January 24, 1957; Outdoor Cooking Trend Helps Expand Glass Container Market—February 1, 1957; Non-Fat Dry Milk Solids in Glass Contribute to New Growth Market—March 1, 1957; and GCMI Semi-Annual Meeting Scheduled at White Sulphur Springs May 21-23—March 29, 1957.

Requests for Information: Members, editors, educators,

students and members of the general public approached GCMI by telephone, letter and in person in increasing [fol. 516] numbers during the past six months with requests for a wide variety of information. These inquiries have, in each instance, been handled by the Market Research and Promotion Division.

III

Member Information

In addition to advance mailings of most of the foregoing, the following material has been supplied to GCMI members on a continuing basis:

Advertising and Promotion Bulletins: During the course of the six-month period, 43 mailings were sent to some 230 executives of member companies reporting details of the Advertising and Promotion Program. While it is not possible to recap full details in the course of this brief report, members were advised regularly on all developments in the M R & P Program as they occurred.

Container Capsules: A digest of current news developments culled from some 131 trade papers and daily newspapers went forth to GCMI members twice a month throughout the six-month period.

Reprints: Complete reprints of significant editorial comment were mailed to members at the rate of about seven a month during the past six months.

IV

Marketing Research

Syracuse Beer Container Survey: Designed to develop information on which to base possible promotion of beer in bottles, this four-part study was conducted in the Syracuse market in 1956 and 1957. Parts I, II and III comprised, respectively, 1) analyses of sales in a sample of stores, 2) dealer opinions and 3) brewer and distributor opinions. Part IV dealt with consumer opinions, consisting of 581 consumer interviews (290 men and 291 women). Results of Parts I, II and III were presented to the Beer Bottle Subcommittee on July 26, 1956, results of the consumer studies on March 26, 1957.

Merchandising Research: Four large supermarkets of

the Giant Food Shopping Chain are cooperating in a merchandising research project designed to ascertain how the proper use of glass-packaged foods can best build the grocer's over-all volume. The participating stores each do an annual business of about four million dollars. They are located within the District of Columbia and in neighboring Maryland and Virginia suburbs.

After extensive preparation and planning, the entire packaged fruits and vegetables departments in the four stores were completely reorganized on April 1, 1957, in accordance with the research requirements. This special shelf organization, with periodic changes, will continue in the stores until the end of June.

Two basic merchandising areas are being examined: first, the type of shelf display which best makes use of glass-packaged products as a stimulus to store sales; and secondly, the ratio of glass to can packaged merchandise which may be expected to give the retailer maximum movement of both.

[fol. 517] National Consumer and Dealer Survey: Ford Sammis and Company have further analyzed data from this basic study completed last August. A preliminary report on this study was made by Mr. Sammis at Phoenix in November. A complete report will be made at the forthcoming meeting at White Sulphur Springs.

Beer in Virginia: Following completion of GCMI's bottled beer advertising campaign in Virginia markets, Ford Sammis and Company completed studies in this area with further consumer surveys and distribution studies.

Los Angeles Studies: Audits of the sale of soft drinks and baby foods in stores in the Los Angeles area were continued during the past six months by Ford Sammis and Company.

Consumer Survey: Plans are being developed for the fourth annual consumer survey. Field work will commence in August, indicating that at least a preliminary report can be made at the Fall meeting at Virginia Beach. Due to the early date of this meeting, however, it will not be possible to make a complete report at that time.

Packaging Industry Studies: A detailed statistical study of the over-all packaging industry is nearing completion. This study will up-date the industry analysis presented to

the membership in December of 1953. A report of this study will be made at the forthcoming White Sulphur Springs meeting.

Milk Bottle Study: A special study of the market problems of the glass milk bottle has been completed and presented to the Subcommittee on Milk Bottles and, in summary form, to the Market Research and Promotion Committee. Further studies are indicated in this area and will be carried forward.

GCMI Market Research Files: These files are continuously up-dated by a day-to-day reading of newspapers, trade and business papers, surveys and reports. The result is a packaging library of increasing value to members, editors, customers and the general public.

West Coast Subcommittee Activities.

Since the last Semi-Annual Report, the West Coast Subcommittee has held meetings in San Francisco on January 9; Los Angeles, January 17; Los Angeles, February 1; Pebble Beach, March 8, 1957.

On November 12, 1956, members of the West Coast Subcommittee discussed the excellent holding effect of the 1956 Los Angeles market program beamed at bottled soft drinks with the Market Research and Promotion Committee, recommending that the program be continued in 1957. Acting upon the recommendations of the West Coast Subcommittee and Mr. Cheney, \$25,000 of GCMI funds was appropriated to supplement funds to be raised by the West Coast manufacturers.

It is planned to increase radio spot coverage, devoting approximately \$35,000 of the budget towards a saturation radio spot program of over 4,200 thirty-second spots on 10 radio stations during a 13-week program commencing June 24, 1957.

Concentration of these spots will be at peak traffic hours, both morning and evening, and over week-ends.

Point-of-sale material designed for use in conjunction with the material developed by individual bottlers is in preparation. This is to be merchandised to the bottlers by [fol. 518] the merchandising and sales staffs of the manufacturers and the West Coast office of GCMI, and to grocers

through merchandising teams of the radio stations, Kenyon & Eckhardt, and manufacturers' sales staffs.

Under the direction of the Subcommittee, the West Coast Manager delivered a brief talk and showed the GCMI film "The Story Behind A Bottle" to the Pickle Packers Association at their West Coast meeting held in Santa Barbara, March 22, and participated in the University of California Extension Division course in "Modern Packaging" March 25, 1957, delivering a short lecture and presenting the film.

The Subcommittee has closely watched the California Grocers Association time study of the handling of the returnable containers and the West Coast Manager has been in close liaison with the Executive Vice President of the California Grocers Association concerning this Survey.

Subcommittee members have been keeping Mr. Cheney advised concerning marketing activity of a number of glass-packed products on the West Coast.

Respectfully submitted, Franklin B. Pollock, Chairman.

[fol. 519] — GOVERNMENT'S EXHIBIT 121

Committee on Market Research and Promotion
Semi-Annual Report of Activities

For the Period May 1957 to September 1957

To the Board of Trustees of
Glass Container Manufacturers Institute

The M R & P Committee consists of:

F. B. Pollock, Chairman—Thatcher Glass Manufacturing Company, Inc., E. F. Ball—Ball Brothers Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company, W. V. Fisher—Anchor Hocking Glass Corporation, J. M. Foster—Foster-Forbes Glass Company, J. S. Heuisler—Maryland Glass Corporation, G. A. Mengle—Brockway Glass Company, Inc., S. V. Tuttas—Crown Cork & Seal Company, Inc., P. O'C. White—White Cap Company, A. W. Wishart—Knox Glass, Inc.

R. L. Cheney is Secretary.

The Task Committee:

R. H. Hetzel, Chairman—Armstrong Cork Company, S. F. Davis—Owens-Illinois Glass Company, S. B. DeMerell—Anchor Hocking Glass Corporation, W. H. Ellis—The Lamb Glass Company, J. H. Funkey—Carr-Lowrey Glass Company, J. A. Giddings—Brockway Glass Company, Inc., K. M. Hay—Ball Brothers Company, Inc., P. I. Henisler, Jr.—Maryland Glass Corporation, P. S. Holmquest—Thatcher Glass Manufacturing Company, Inc., J. H. Majesky—Hazel-Atlas Glass Division, Continental Can Company, Inc., R. H. Roper, Jr.—Laurens Glass Works, Inc. R. L. Cheney is Secretary.

The West Coast Subcommittee:

K. C. White, Chairman—Owens-Illinois Glass Company, E. S. Campbell—Northwestern Glass Company, E. L. Casey—Hazel-Atlas Glass Division, Continental Can Company, Inc., R. H. Dallas—Maywood Glass Company, J. W. Donaldson—Ball Brothers Company, Inc., F. W. McDonald—Glass Containers Corporation, J. B. Miller—Thatcher Glass Manufacturing Company, Inc., William Simkins—Litchford Glass Company, Russell Gowans—Crown Cork & Seal Company, Inc.

Frank H. Wright is Secretary.

[fol. 520] Committee Meetings.

The Market Research and Promotion Committee met:

At The Greenbrier, White Sulphur Springs, West Virginia, on May 20, 1957.

At GCMI headquarters on August 27, 1957.

The Task Committee met:

At GCMI headquarters on September 11, 1957.

The Market Research and Promotion Program divides into four major parts:

I

Advertising and Promotion

II

Public Information

III

Member Information

IV

Market Research

Following are developments in each of these four major areas since the meeting at White Sulphur Springs in May of 1957:

I

Advertising and Promotion

Magazines: Work was completed on the full-page, four-color advertisements scheduled to appear during 1957 in the five consumer magazines in which GCMI advertises as follows: Family Circle, Good Housekeeping, Ladies' Home Journal, McCall's and Woman's Day. With the appearance of the cosmetic ad in November issues, a total of 36 insertions will have appeared in 1957 issues of the foregoing magazines. Subjects of the ten advertisements in the 1957 series were as follows: February—Beets; March—Pickles; April—Drugs; May—Milk; June—Soft Drinks; July—Beer; August—Soft Drinks; September—Baby Foods; October—Fruit Juices; and November—Cosmetics. Combined circulation of the five consumer magazines on the 1957 schedule total 20,199,000. Average monthly readership of these magazines is estimated at over 32,000,000. In the three years of the current GCMI advertising program, an impressive total of over 672,000,000 advertising messages have been delivered by magazines alone.

Canadian Program: Canadian members continued to supply the funds with which ads appearing in U. S. magazines were re-used on a delayed basis in the Canadian magazine Chatelaine, circulation of which is over 400,000. With a re-

run of the Pickle ad in the November issue, a total of seven full-page, four-color insertions will have appeared in Chate-laine in 1957.

[fol. 521] Trade Publications: Believing strongly in the value of telling the story of glass containers to members of the retail food industry, the Committee continued the GCMI advertising program in the following seven food journals: Chain Store Age, Food Topics, Nargus Bulletin, Progressive Grocer, Supermarket Merchandising, Supermarket News, and Voluntary and Cooperative Groups Magazine. Combined circulation of these seven magazines totals 316,000. Total insertions in 1957: 42.

Glass Packer: Because Glass Packer has a circulation of some 6,000 among packaging consultants, users of glass containers, manufacturers' associations and allied industries, the Committee deems it advisable to advertise in this publication on a continuing basis. Double-page advertisements are accordingly scheduled on a twelve-times-a-year basis.

Labor Papers: Ten national labor publications were also included on the 1957 schedule as follows: American Teacher, American Teacher Magazine, Boilermakers Journal, Locomotive Fireman, Maintenance Way Journal, Public Employee, Railway Carriers Journal, Union Postal Clerk, Locomotive Engineers' Journal and Railroad Telegrapher. Combined circulation totals 1,083,000. Black and white versions of the consumer ads appeared on a staggered basis throughout 1957. Total insertions for the year were 47. This schedule was supplemented by 114 insertions in 42 regional labor papers with a combined circulation of 1,276,000.

Local Programs: Details of the special effort promoting glass bottles for soft drinks in the Los Angeles area and the special effort promoting one-way bottles for beer in the State of Virginia are included in the reports of the West Coast Subcommittee and the Beer Bottle Subcommittee, respectively, which follow.

Merchandising the Advertising: Every ad is extensively merchandised. While space does not permit a detailed report, major projects include: 1) mailings of special merchandising material by consumer magazines on the schedule; 2) mailings by GCMI of personally-addressed,

hand-typed letters—accompanied by a proof—to leading packers; 3) Glass Container Sales letters sent each month to 3,500 executives supervising buying for 28,000 supermarkets—as well as to packers, distributors and associations in each end-use area; 4) mailing of regular releases and glossy prints of ads to interested trade papers in each field.

Store-Wide Glass Festival: Promotional kits, in which blow-ups of consumer ads were incorporated, were offered on a test basis in the Spring of 1957 to limited groups of retailers for in-store use. Some 3,500 kits were requested and are, in most cases, being used during September and October. Plans for 1958 will be based upon the full reports of this test effort.

II

Public Information

During the past three years, several promotional tools have been developed and they are being used on a continuing basis to project the attributes of glass containers to large segments of the public. Following is a brief report of how this material is being applied on a day-by-day basis to increase consumer awareness of glass containers:

"The Story Behind A Bottle": The last semi-annual report included distribution figures through the end of March, 1957. From April 1st, 1957, through the end of July, GCMI's 24-minute motion picture was televised 122 times over stations in 43 states to a total viewing audience conservatively estimated at over 7,250,000. Through the end of July, the film has been televised 299 times to an estimated [fol. 522] audience of nearly 16,000,000. Had this free time been purchased, it would have cost more than \$50,000.

During the four-month period ending in July, the film was also shown to 875 groups in 48 states. Non-TV showings through the end of July total 1,573. Groups to which the film was shown include associations of soft drink bottlers, associations of food retailers, men's and women's clubs, church groups, educational groups, business organizations and associations. In addition, GCMI member companies own and show prints, and a dozen prints are kept in constant circulation from GCMI headquarters.

"Glass Containers—1956": This new 48-page informa-

tional booklet was completed just prior to the White Sulphur meeting. Copies were subsequently distributed to some 3,000 opinion makers. Included were: members of the working press; security analysts; leading packers; and public, government, bank and other libraries. In addition, GCMI member companies requested over 3,000 copies for their own use.

"The Story of Glass Containers": Over 800,000 copies of this 16-page teaching unit have been requested to date. Requests arrive in every mail from teachers who have used it before, from teachers trying it for the first time, from companies, individuals, and others.

"The History of Glass Containers": This 24-page booklet continues popular among GCMI members who order copies with the corporate title of their respective company imprinted on cover and title page. Additional copies are also frequently requested by students, writers and others interested.

"Feature": This editorial feature service in magazine form is distributed to publications throughout the country. The issue dated June, 1957, offered editors a GCMI article entitled "Bottles by the Billion" and a series of seven accompanying photographs. Over seventy-five requests for the text and photographs have been received so far from editors of newspapers, Sunday supplements, magazines and house organs.

Releases: During the five-month period, from April through August, the following releases were sent out by GCMI to wire services, daily newspapers and trade papers: Glass Blowers Contract Increases Wages and Benefits 28¢ Per Hour—April 23, 1957; E. F. Ball Named President of Glass Container Institute—May 22, 1957; GCMI Elects New Trustees—May 29, 1957; and GMCI Semi-Annual Meeting Scheduled at Virginia Beach September 30-October 3—August 9, 1957.

Requests for Information: GCMI Market Research and Promotion Division continues to handle an increasing number of requests for information received from members, editors, educators, students, businessmen and members of the general public.

Plans for 1958: Considerable time was expended during the summer months in analyzing ways and means of extend-

ing the public information program in the months ahead. Projects under consideration or in formative stages include a 12½-minute, 35-mm version of "The Story Behind A Bottle" for distribution in motion picture theatres throughout the country, an extension of the recently established photographic library, a Mason Jar Centennial, a woman's club program, and so on.

III

Member Information

Advertising and Promotion Bulletins: Some 240 executives of member companies were kept informed of all phases of the M R & P Program through 33 mailings during [fol. 523] the five-month period ending in September.

Container Capsules: Current news items taken from more than 130 trade publications and dailies were distributed to members in digest form twice a month during the five-month period.

Reprints: Editorial comments of importance to the industry were mailed to members at the rate of about seven per month.

IV

Marketing Research

Merchandising Research: The merchandising research project in the four large supermarkets of the Giant Food Shopping Chain in the Washington, D. C., area has been completed. Preliminary reports will be presented at the forthcoming meeting at Virginia Beach.

Plans will also be presented there for utilizing results of this research to food retailers through booklets, trade paper advertising and other means.

National Consumer and Wholesaler Survey: Ford Sammis & Company completed field work for the fourth annual GCMI consumer survey in August and a report will be made to the membership at the Virginia Beach meeting. This year's survey covered 4,000 women, 2,000 men, 1,000 children and 100 wholesaler and chain store headquarters.

Beer In Virginia: Following GCMI's advertising campaign promoting one-way bottles for beer in the State of Virginia, Ford Sammis & Company have conducted con-

sumer surveys and distribution studies to determine progress made in that market.

Los Angeles Studies: The store audits covering the sale of soft drinks and baby foods in the Los Angeles area have been continued during the summer by Ford Sammis & Company and a final consumer survey will be conducted to determine the results of the 1957 soft drink bottle campaign in that area.

Milk Bottle Study: The first of a proposed series of interviews with leading operators in the dairy field has been held by the Marketing Manager and this study, designed to clarify the problems in this area, will be continued through the Fall.

GCMi Market Research Files: The continuous combing of all types of publications for information covering all phases of the packaging industry has kept the GCMi market research library up to date and it is being effectively utilized in the advertising and promotion as well as information services of the Institute.

West Coast Subcommittee Activities

Meetings of the West Coast Subcommittee covered by this report were held in Los Angeles on April 24; Balboa, June 6-7, 1957; San Francisco, July 31, 1957; and September 17, 1957.

The major portion of the Subcommittee's activity since last reporting has been concentrated on the 1957 program promoting soft drinks in glass bottles in the Los Angeles market.

Colorful point-of-purchase material was developed by the agency consisting of soft sheets and bottle hangers with separate copy for one-ways and returnable bottles. Mr. E. [fol. 524] P. Schindler, well known to the Los Angeles food and beverage trade, and previously on GCMi payroll during the one-way beer bottle promotion from 1947 to 1950, was retained to merchandise the point-of-purchase material in the retail outlets of greater Los Angeles. The material developed this year was supplemented with reprints of both national soft drink ads, a limited quantity of shelf talkers and snipes left over from the 1955 promotion, and a supply of the pamphlet developed by Mr. Cheney's

department covering the bottled soft drink profit picture for the retailer.

The merchandising efforts of Mr. Schindler have been coordinated with merchandising activity by the 10 radio stations carrying GCMJ spot advertisements. Many pluses have been gained through special "packages" the stations provide their clients, including in-store spots into 35 markets eight times a day for two weeks by one station, and a "Southland Salute" honoring the glass container manufacturers who make the bottles for the soft drink industry by another. The other stations have all featured special soft drink displays in chain markets who are their clients, over staggered dates throughout the duration of the radio spot campaign.

The radio spots commencing June 24 and continuing through September 22 were brought to the attention of the grocers in the Los Angeles market through full page ads which were placed in the Southern California Grocers Journal and the Commercial Bulletin in the June 28 issues. Mr. Schindler commenced his merchandising of the program on June 15, thereby getting groundwork laid prior to the kick-off of the spot campaign.

Reports gathered from the retail trade, route salesmen, and principals of the soft drink industry indicate the program has been successful and has created the effect desired. Further, analysis of the Sammis store audits and the continuing home audits conducted by the Los Angeles Times lead the Subcommittee to believe that we have been effective up to a point. Further exploration by all of the Subcommittee members is being made, and recommendations concerning a 1958 program will be finalized for submittal to the parent committee and Director of Marketing when the Subcommittee meets on September 17, 1957.

The Subcommittee is keeping Mr. Cheney supplied with information as to the acceptance by consumer and retailer of the 11 oz. returnable stubby beer bottle recently introduced by a California brewer.

Subcommittee members are forwarding retail store ads featuring baby foods to Mr. Cheney and are carefully watching baby food trends in metal containers and glass on the West Coast.

Respectfully submitted, Franklin B. Pollock, Chairman.

[fol. 525]

GOVERNMENT'S EXHIBIT 122

Committee on Market Research and Promotion

Semi-Annual Report of Activities
For the Period October 1957 to May 1958

To the Board of Trustees of
Glass Container Manufacturers Institute

The Market Research and Promotion Committee consists of:

G. A. Mengle, Chairman—Brockway Glass Company, Inc., C. G. Bensinger—Owens-Illinois Glass Company, E. D. Easterby—Laurens Glass Works, Inc., J. C. Feagley—Armstrong Cork Company, J. W. Fisher—Ball Brothers Company, Inc., W. V. Fisher—Anchor Hocking Glass Corporation, J. M. Foster—Foster-Forbes Glass Company, W. J. Green—Thatcher Glass Manufacturing Company, Inc., J. S. Heisler—Maryland Glass Corporation, S. V. Tuttle—Crown Cork & Seal Company, Inc., P. O'C. White—White Cap Company, A. W. Wishart—Knox Glass, Inc.

R. L. Cheney is Secretary.

The Task Committee:

R. H. Hetzel, Chairman—Armstrong Cork Company, A. G. Beltz—Brockway Glass Company, Inc., S. F. Davis—Owens-Illinois Glass Company, S. B. DeMerell—Anchor Hocking Glass Corporation, W. H. Ellis—The Lamb Glass Company, J. H. Funkey—Carr-Lowrey Glass Company, K. M. Hay—Ball Brothers Company, Inc., P. I. Heisler, Jr.—Maryland Glass Corporation, P. S. Holmquest—Thatcher Glass Manufacturing Company, Inc., J. H. Majesky—Hazel-Atlas Glass Division, Continental Can Company, Inc., R. H. Roper, Jr.—Laurens Glass Works, Inc.

R. L. Cheney is Secretary.

The West Coast Subcommittee:

K. C. White, Chairman—Owens-Illinois Glass Company, E. S. Campbell—Northwestern Glass Company, E. L. Casey—Hazel-Atlas Glass Division, Continental Can Company, Inc., R. H. Dallas—Maywood Glass Company, J. W. Donald-

son—Ball Brothers Company, Inc., Russell Gowans—Crown Cork & Seal Company, Inc., F. W. McDonald—Glass Containers Corporation, J. B. Miller—Thatcher Glass Manufacturing Company, Inc., William Simkins—Litchford Glass Company.

Frank H. Wright is Secretary.

[fol. 526] Committee Meetings.

The Market Research and Promotion Committee met:

At The Cavalier, Virginia Beach, Virginia, on September 30, 1957

At GCMI headquarters on December 4, 1957

At GCMI headquarters on April 10, 1958

Since the last report, there have been no meetings of the Task Committee.

The Market Research and Promotion Program divides into four major parts:

I

Advertising and Promotion

II

Public Information

III

Member Information

IV

Market Research

Following are developments in each of these four major areas since the Virginia Beach meeting in September of 1957:

I

Advertising and Promotion

Magazines: Work was completed on eleven full-page, four-color advertisements scheduled to appear during 1958 in the five consumer magazines on the GCMI schedule as

follows: Family Circle, Good Housekeeping, Ladies' Home Journal, McCall's and Woman's Day. Subjects of the eleven advertisements in the 1958 series are: February-Drugs; March-Coffee; April-Household Chemicals; May-Beer and Soft Drinks; June-Soft Drinks; July-Baby Food and Spices; August-Baby Food; September-Milk; October-Applesauce; and November-Jam and Peanut Butter (one ad). Combined circulation of the five consumer magazines on the 1958 schedule totals 23,300,000. Average monthly readership of these magazines is estimated at over 57,000,000. By the end of 1958 it is estimated that over 942,000,000 GCMI advertising messages will have been delivered by magazines alone since the inception of the current promotional program in 1955.

Gratifying was the fact that the American Institute of Graphic Arts announced last February that a GCMI advertisement (Fruits for Salad) had been selected as one of the "Fifty Advertisements of the Year" by the A.I.G.A.

[fol. 527] Canadian Program: Canadian members continued to supply funds with which ads appearing in U. S. magazines are re-used on a delayed basis in the Canadian magazine *Chatelaine*—circulation of which is over 400,000. Six full-page, four-color advertisements are scheduled during 1958.

Trade Publications: Believing in the value of telling the story of glass containers to members of the retail food industry, the Committee continued the GCMI advertising program in the following seven food journals in 1958: Chain Store Age, Food Topics, Nargus Bulletin, Progressive Grocer, Super Market Merchandising, Supermarket News, and Voluntary and Cooperative Groups Magazine. Combined circulation of these seven magazines totals nearly 350,000. Total insertions in 1958: 42.

GCMI's 1957 trade advertising program—consisting of eight advertisements—was awarded first place in the category of Public Relations Advertising in a competition conducted by the Associated Business Publications, it was announced in mid-April.

Glass Packer: Because Glass Packer has a circulation of some 6,000 among packaging consultants, users of glass containers, manufacturers' associations and allied industries, the Committee deems it advisable to advertise in this

publication on a continuing basis. Double-page advertisements are accordingly scheduled on a twelve-times a year basis.

Labor Papers: Ten national labor publications are also included on 1958 schedules. They are: American Teacher, American Teacher Magazine, Boilermakers Journal, Locomotive Fireman, Maintenance Way, Journal, Public Employee, Railway Carmen's Journal, Union Postal Clerk, Locomotive Engineers' Journal and Railroad Telegrapher. Combined circulation totals approximately 1,150,000. Black and white versions of the consumer ads are scheduled on a staggered basis throughout 1958. Total insertions for the year: 37. This schedule is supplemented by 156 insertions in 55 regional labor papers with a combined circulation of 1,519,000.

Merchandising the Advertising: Every ad is extensively merchandised. While space does not permit a detailed report, major projects include: 1) mailings of special merchandising material by consumer magazines on the schedule; 2) mailings by GCMJ of personally addressed, hand-typed letters—accompanied by a proof—to leading packers; 3) Glass Container Sales letters sent each month to 5,200 executives supervising buying for 28,000 supermarkets—as well as to packers, distributors and associations in each end-use area; 4) mailings of regular releases and glossy prints of ads to interested trade papers in each field.

Local Programs: Details of the special effort promoting glass bottles for soft drinks in the Los Angeles area are included in the report of the West Coast Subcommittee which appears later in this report.

Store-Wide Glass Festival: Promotional kits, in which blow-ups of consumer ads were incorporated, were offered on a test basis in the spring of 1957 to limited groups of retailers for in-store use. Some 3,500 kits were requested and used during the latter part of 1957. Plans for 1958 call for an extension of this successful in-store promotion.

Public Information

Following is a brief report on how various GCMI promotional tools are being used on a day-to-day basis to increase consumer awareness of glass containers:

"The Story Behind A Bottle": The last semi-annual report included distribution of this color film through the end of July, 1957. Through March 31, 1958, GCMI's 24-minute motion picture was televised 420 times over stations in 43 states to a total viewing audience conservatively estimated at over 20,000,000. Had this free time been purchased, it would have cost more than \$80,000.

Non-TV showings through the end of March totaled 3,716. Groups to which the film was shown include associations of soft drink bottlers, associations of food retailers, men's and women's clubs, church groups, educational groups, business organizations and associations. In addition, GCMI member companies own and show prints, and a dozen prints are kept in constant circulation from GCMI headquarters.

"Ancient Art—Modern Magic": Beginning early in May, 1958, screenings of 35-mm prints of this ten-minute version of "The Story Behind A Bottle" will begin in first-run motion picture theatres in key cities throughout the nation. By the end of 1958, it is anticipated that some 1,500 such bookings will have been completed, and the new film will have been viewed by movie audiences totaling 2,500,000.

"Glass Containers—1957": This new, enlarged 60-page informational manual—incorporating 1957 statistics—was completed early in May. Copies were subsequently distributed to some 5,000 opinion makers. Included were: members of the working press; security analysts; leading packers; deans of business schools; package designers; and public, government, bank and other libraries.

"The Story of Glass Containers": Over 900,000 copies of this 16-page teaching unit have been requested to date. Each mail brings requests from teachers, libraries, companies and individuals.

"The History of Glass Containers": This 24-page booklet continues popular among GCMI member companies. Copies are also requested by students, writers and others.

Releases: During the eight-month period, from September through April, the following releases were sent out by GCMI to wire services, daily newspapers and trade papers: GCMI President Reports Gains in Glass Container Shipments at Virginia Industry Meeting—September 27, 1957; Glass Milk Bottles Insure Full Measure—October 14, 1957; Glenn A. Mengle Named Committee Chairman—October 21, 1957; Bush Barnum Named Advertising and Public Information Director of Glass Institute—November 8, 1957; Glass Container Shipments Reach New Peak in 1957—January 24, 1958; GCMI Semi-Annual Meeting Scheduled at White Sulphur Springs May 20-23—April 21, 1958.

Photos: In recent months photographic files were increased by some 25 new end-use photographs. Some were used in "Glass Containers—1957." Others are being released. Still others are being held for specific future use.

[fol. 529] **Requests for Information:** The Market Research and Promotion Division continues to handle an increasing number of requests for information received from members, editors, educators, students, businessmen and members of the general public.

III

Member Information

Advertising and Promotion Bulletins: Some 240 executives of member companies were kept informed of all phases of the M R & P program by 40 mailings during the eight-month period ending April 25, 1958.

Container Capsules: Current news items taken from more than 145 trade publications and dailies were distributed to members in digest form twice a month during the eight-month period.

Reprints: Editorial comments of importance to the industry were mailed to members at the rate of about six per month.

IV

Marketing Research

Starting with the original study in 1953 of the Market Problems of the Glass Container Industry, each step in the development of GCMI's advertising, promotion and public information program has been based upon thorough, sound marketing research. The past seven months have seen continued progress in this area.

Member's Use of GCMI Research: At its April 10, 1958 meeting, the Committee established the policy that the facts contained in the various GCMI surveys (such as the Sammis surveys) shall be made available to individual members for promotional use—subject to the specific approval of Mr. Cheney.

Consumer Preferences and Motivations on Containers, 1954-1957: This report, which was presented at the membership meeting at Virginia Beach on October 1, is available to members in printed form on the usual library-loan basis. It covers the nationwide consumer attitude studies conducted over the past four years, including the 1957 survey which involved more than 7,000 interviews.

GCMI Giant Study: This merchandising research project, conducted in supermarkets of the Giant Food Store chain in the Washington, D. C. area, has been completed. Plans to exploit the findings on the broadest possible basis are complete, and it is hoped that its impact upon the food retailing industry will result in increased sale of glass-packed products.

Advertising Rating Studies: Both the leading organizations in the field of analyzing the effectiveness of advertising have been retained to measure GCMI consumer ads. They are: 1) Gallup & Robinson, Inc. and 2) Daniel Starch & Company. Over a two-year period, registration of GCMI ads by Gallup & Robinson scored 13.7 compared with 12.1 for the average of all packaging advertisements, and 10.0 for all advertising. The same firm rated GCMI ads second in order of rank among 26 different association advertising programs. These reports and those of Daniel Starch organization are being studied monthly with a view to continually improving the impact and effectiveness of GCMI advertising.

[fol. 530] GCMi Market Research Files: A full-time librarian continues to comb all types of publications for information covering the many phases of the packaging industry, so that up-to-date files are always available for the use of the marketing division and representatives of member companies.

West Coast Subcommittee Activities

Five meetings of the Subcommittee have been held since the October, 1957 report:

October 31-November 1, 1957

November 26, 1957

January 15, 1958

February 19, 1958

March 27, 1958

As reported in the October, 1957 semi-annual report, after studying bottler and retailer reactions to the 1957 Soft Drink Program carried on in the Los Angeles market, and after analyzing the Sammis store audits and other material, the Subcommittee instructed the West Coast manager to recommend a program involving approximately \$50,000 for a 1958 soft drink promotion in the Los Angeles market during the summer months. Recognizing the importance of a continuing program, the parent Committee approved the West Coast Subcommittee's recommendation.

The most effective promotion was considered to be a two phase program consisting of a test merchandising promotion in Los Angeles and Orange Counties with the cooperation of qualifying grocery chains, and a radio advertising program consisting of 13 weeks of 10-second spots on selected radio stations.

The six grocery chains participating in this test program represent 215 retail outlets and enjoy an estimated 25.6% of the grocery volume in those counties. The program involves cooperative advertising and display techniques designed to increase sales of glass-bottled soft drinks. A means of measuring results is included.

Through the joint efforts of the Marketing Department, West Coast Subcommittee, advertising agency, and the advertising and merchandising managers of the participating chains, colorful, durable, point-of-purchase material has

been developed consisting of 9½ x 10" plastic stack markers for both returnable and one-way bottled soft drinks and shelf-edge markers identifying no-deposit, no-return bottles, "The Bottle You Don't Take Back." This material will be supplied to the grocers at no cost.

An experienced merchandiser has been retained to assist GCMI to help the local store managers build their displays and organize their soft drink sections. He will go on the GCMI payroll June 15, 1958, and terminate September 15, 1958.

The second phase of the program—radio advertising—consists of 10-second spots for both returnable bottles and for no-deposit bottles over selected radio stations broadcasting in Los Angeles at a saturation level (approximately 100 per week) for a 13-week period beginning June 15. These spots will be delivered live by various radio personalities which should result in greater listenership and possible added extemporaneous remarks plugging glass bottles, resulting in additional time.

[fol. 531]. Under the direction of the Subcommittee, the West Coast manager is responsible for the coordination of this program with the merchandising and advertising managers of the participating firms, the advertising agency, and the GCMI merchandiser.

The Subcommittee has kept abreast of developments in the baby food industry on the West Coast.

Respectfully submitted, Glenn A. Mengle, Chairman.

[fol. 532]

GOVERNMENT'S EXHIBIT 123

Committee on Market Research and Promotion
Semi-Annual Report of Activities For the Period
May 1958 to November 1958

To the Board of Trustees of Glass Container
Manufacturers Institute

The Market Research and Promotion Committee consists of:

J. W. Fisher, Chairman—Ball Brothers Company, Inc.,
C. G. Bensinger—Owens-Illinois Glass Company, E. D.
Easterby—Laurens Glass Works, Inc., J. C. Feagley—Arm-
strong Cork Company, W. V. Fisher—Anchor Hocking
Glass Corporation, J. M. Foster—Foster-Forbes Glass
Company, W. J. Green—Thatcher Glass Manufacturing
Company, Inc., P. I. Heuisler, Jr.—Maryland Glass Corpo-
ration, J. Gordon King—Hazel-Atlas Glass Division, Con-
tinental Can Company, Inc., G. A. Mengle—Brockway Glass
Company, Inc., E. M. Turner—Metro Glass Company, Inc.,
S. V. Tuttas—Crown Cork & Seal Company, Inc., A. W.
Wishart—Knox Glass, Inc.

R. L. Cheney is Secretary.

The Task Committee:

K. M. Hay, Chairman—Ball Brothers Company, Inc.,
A. G. Beltz—Brockway Glass Company, Inc., S. F. Davis—
Owens-Illinois Glass Company, W. H. Ellis—The Lamb
Glass Company, J. H. Funkey—Carr-Lowrey Glass Com-
pany, J. H. Harkness—Fairmount Glass Works, Inc., R. H.
Hetzl—Armstrong Cork Company, P. S. Holmquest—
Thatcher Glass Manufacturing Company, Inc., J. P. Moore
—Metro Glass Company, Inc., J. J. Renard—Anchor Hock-
ing Glass Corporation, R. H. Roper, Jr.—Laurens Glass
Works, Inc., C. L. Rossman—Knox Glass, Inc., J. W.
Thayer—Hazel-Atlas Glass Division, Continental Can Com-
pany, Inc.

R. L. Cheney is Secretary.

The West Coast Subcommittee:

M. J. Olds, Chairman—Hazel-Atlas Glass Division, Continental Can Company, Inc. E. S. Campbell—Northwestern Glass Company, R. H. Dallas—Maywood Glass Company, J. W. Donaldson—Ball Brothers Company, Inc., Russell Gowans—Crown Cork & Seal Company, Inc., F. W. McDonald—Glass Containers Corporation, J. B. Miller—Thatcher Glass Manufacturing Company, Inc., William Simkins—Litchford Glass Company, K. C. White—Owens-Illinois Glass Company.

Frank H. Wright is Secretary.

[fol. 533] Committee Meetings.

The Market Research and Promotion Committee met:

At The Greenbrier, White Sulphur Springs, West Virginia, on May 20, 1958.

At The Greenbrier, White Sulphur Springs, West Virginia, on May 22, 1958

At GCMI headquarters on September 25, 1958

The Task Committee met:

At GCMI headquarters on September-16, 1958

The Market Research and Promotion Program divides into four major parts:

I

Advertising and Promotion

II

Public Information

III

Member Information

IV

Market Research

Following are developments in each of these four major areas since the meeting at White Sulphur Springs in May of 1958:

I

Advertising and Promotion

Magazines: Work was completed on eleven full-page, four-color advertisements scheduled to appear during 1958 in the five consumer magazines in which GCMI advertises as follows: Family Circle, Good Housekeeping, Ladies' Home Journal, McCall's and Woman's Day. With the appearance of the jam and peanut butter ad in November issues, a total of 40 insertions will have appeared in 1958 issues of the foregoing magazines. Subjects of the eleven advertisements in the 1958 series are as follows: February-Drugs; March-Instant Coffee; April-Chemicals; May-Soft Drinks #1 and Beer; June-Soft Drink #2; July-Baby Foods and Spices; August-Baby Foods; September-Milk; October-Applesauce; and November-Jam and Peanut Butter (one ad). Combined circulation of the five consumer magazines on the 1958 schedule totals 23,860,000. Average monthly readership of these magazines is estimated at over 33,800,000. In the three years of the current GCMI advertising program, an impressive total of over 942 million advertising messages have been delivered by magazines alone.

[fol. 534] **Canadian Program:** Canadian members continued to supply the funds with which ads appearing in U. S. magazines were re-used on a delayed basis in the Canadian magazine Chatelaine, circulation of which is over 406,000. A total of six full-page, four-color insertions will have appeared in Chatelaine in 1958.

Trade Publications: Believing strongly in the value of telling the story of glass containers to members of the retail food industry, the Committee continued the GCMI advertising program in the following seven food journals: Chain Store Age, Food Topics, Nargus Bulletin, Progressive Grocer, Supermarket Merchandising, Supermarket News, and Voluntary and Cooperative Groups Magazine. Combined circulation of these seven magazines totals 344,200. Total insertions in 1958: 44.

Glass Packer: Because Glass Packer magazine has a

circulation of some 6,200 among packaging consultants, users of glass containers, manufacturers' associations and allied industries, the Committee deems it advisable to advertise in this publication on a continuing basis. Double-page advertisements are accordingly scheduled on a twelve-times-a-year basis.

Labor Papers: Ten national labor publications were also included on the 1958 schedule as follows: American Teacher, American Teacher Magazine, Boilermakers Journal, Locomotive Fireman, Maintenance Way Journal, Public Employee, Railway Carmens Journal, Union Postal Clerk, Locomotive Engineers' Journal and Railroad Telegrapher. Combined circulation totals 1,143,000. Black and white versions of the consumer ads appeared on a staggered basis throughout 1958. Total insertions for the year were 37. This schedule was supplemented by 156 insertions in 57 regional labor papers with a combined circulation of more than 1,150,000.

Local Program: Details of the special effort promoting glass bottles for soft drinks in the Los Angeles area are included in the report of the West Coast Subcommittee.

Merchandising the Advertising: Every ad is extensively merchandised. While space does not permit a detailed report, major projects include: 1) mailings of special merchandising material by consumer magazines on the schedule; 2) mailings by GCMI of personally addressed, hand-typed letters—accompanied by a proof—to leading packers; 3) Glass Container Sales letters sent each month to 3,500 executives supervising buying for 28,000 supermarkets—as well as to packers, distributors and associations in each end-use area; 4) mailing of regular releases and glossy prints of ads to interested trade papers in each field.

Store-Wide Glass Festival: GCMI's developing contact with food retailers made it possible, in 1957, to conduct a successful test of a store-wide promotion. Some 3,000 stores cooperated with good results. The scope of this promotion plan has been expanded in 1958,—the promotion kits, in which blow-ups of consumer ads are incorporated, being enlarged to meet the requirements of stores doing an annual volume of \$2,000,000. The goal is to place 5,000 kits this

year, and requests,—including those from important units of leading national chains—have been gratifying.

II

Public Information

In an effort to keep glass containers continually before the public, GCMI distributed the following:

[fol. 535] "Ancient Art—Modern Magic": The 35mm ten-minute version of "The Story Behind A Bottle" had its premiere in May, 1958. Through September 15, the film played at 552 motion picture theatres throughout the country. Of these theatres, the 416 already reporting show that it has played to audiences totaling 1,585,000. By the end of 1958, it is anticipated that the film will have played at more than 1,500 theatres before several million people.

"The Story Behind A Bottle": The continuing interest in the 16mm 24-minute film is illustrated by the fact that it has been televised 515 times to an estimated audience of 22,564,000 from its introduction in the Fall of 1956 through September 30, 1958. The estimated value of this time is nearly \$100,000.

In addition, 4,790 groups, including bottlers and food retailers associations, business organizations, service organizations, women's clubs, schools and colleges, have shown the film to approximately 500,000 viewers.

"Glass Containers In Today's Living": The single-frame film strip has been distributed to 8,000 schools for use in their Home Economics classes.

"Glass Containers—1957": This 60-page informational manual—the second in an annual series—was distributed to more than 5,000 opinion makers including: Press, security analysts, leading packers, deans of business schools, package designers, and public, government, bank and special libraries. In addition, hundreds of requests for copies have been received since the booklet was issued last May.

Talks to Security Analysts: A number of factors made it seem very timely to tell the GCMI story once more to security analysts in May and June of this year. Consequently, carefully planned presentations were made to

groups of security analysts in the following cities at the time indicated:

New York—May 13
Chicago—May 15
Philadelphia—June 10
Boston—June 12
San Francisco—June 24
Los Angeles—June 26

A kit of background material was furnished to each analyst (whether or not he was able to attend a meeting) and considerable evidence has already accumulated in the form of published statements on their part, that these important opinion leaders now entertain a more accurate view of the glass container business and no longer think of it as a declining industry.

"The Story of Glass Containers": Almost a million copies of the teaching unit have been distributed to date to teachers, libraries, business organizations and individuals. Recent items mentioning the booklet in "A Wonderful World for Children" and "Good Housekeeping" magazine brought thousands of requests.

"The History of Glass Containers": This 24-page booklet continues to be a useful item. Plans are under way to issue a new edition early in the coming year.

"Mason Jar Centennial": In observance of the one hundredth anniversary of the Mason Jar on November 30, 1958, a booklet telling the history of the jar is being sent, with releases and photographs, to trade papers, leading dailies and food editors. In addition, copies of the booklet are going to editorial writers, women's programs on radio and television, and public libraries.

[fol. 536] Releases: In the five-month period from May through September, the following releases were sent out by GCMI to wire services, leading dailies and trade publications: Glenn Mengle Named President of Glass Container Institute; Advertising As Teaching Material; GCMI Packaging Conference Held on Michigan State University Campus; GCMI Semi-Annual Meeting Scheduled at Sea Island, Georgia, November 11-14; Modern Industry Celebrates

Mason Jar Centennial; John W. Fisher Named Committee Chairman.

Requests for Information: An increased and continuing service in the volume and scope of requests for information received from members, editorial staffs, educators, students, businessmen, researchers and the general public is handled by the Market Research and Promotion Division.

III

Member Information

Advertising and Promotion Bulletins: Some 238 executives of member companies were kept informed of all phases of the Market Research and Promotion program through 23 mailings during the five-month period ending in September.

Container Capsules: Current news items taken from more than 145 trade publications and dailies were distributed to members in digest form twice a month during the five-month period.

Reprints: Editorial comments of importance to the industry were mailed to members at the rate of about seven per month.

IV

Marketing Research

The past six months have seen continuing activity in the field of marketing research for the purpose of guiding our promotional activities and keeping the membership informed of changes in the industry marketing problems.

Members' Use of GCMI Research: The Committee wishes to remind members that copies of all marketing research studies made by GCMI are available on a library-loan basis to members and that members are free to use research data from any of these surveys for promotional use—subject to the specific approval of Mr. Cheney.

Consumer and Retailer Attitude Surveys: For the fifth consecutive year Ford Sammis & Company have completed a nationwide consumer and retailer attitude survey covering a scientifically selected sample of 4,000 women, 2,000 men and 1,000 retail grocers. Mr. Sammis will present these

findings at the semi-annual meeting at Sea Island, Georgia, on November 11th and printed copies will thereafter be available to members on a library-loan basis.

GCMI-Giant Study: A report of the study of the stimulation given to food merchandising by glass packaging, conducted in supermarkets of the Giant Food Store chain in Washington, D. C. will shortly be available in printed form for sales promotion use by the members.

Motivational Research Studies of Beer Bottle Marketing: A study will have been completed by October 30th by the Institute of Motivational Research covering the industry's beer bottle marketing problems. A report of this will be given at the meeting at Sea Island.

[fol. 537] **Special Studies:** Audits covering the movement of bottled and canned soft drinks in the Los Angeles market, together with a consumer attitude survey in that market, have been conducted this year since this market offers our only opportunity of assessing competitive strength of soft drink packaging.

A special detailed study of consumer attitudes towards baby food packaging has also been completed.

Value of the Packaging Industry: In order to keep the measure of glass container industry progress within the packaging industry, the second annual analysis of the Value of the Packaging Industry has just been completed for GCMI by Ford Sammis & Company.

Continuing Information Research: GCMI's full-time market research librarian and her assistants continue to search all pertinent publications and literature in all areas of interest to the glass container industry, particularly in that of end uses of glass containers and competitive packaging. These files are open to members at all times in the GCMI library.

West Coast Subcommittee Activities

During the period covered by this report, the Subcommittee has held three meetings: May 7, 1958, June 24-25, 1958 and September 26, 1958. An additional meeting is scheduled for October 30, 1958.

The great majority of the time and efforts of the Subcommittee members was directed towards the test program for soft drinks in glass bottles conducted in Los Angeles

and Orange counties. This program, commencing June 15, 1958 and continuing for thirteen weeks, was a three phase program consisting of (1) 10-second radio spots at saturate level (approximately 100 per week), given Class A time preference on five major radio stations in Los Angeles, (2) in-store cooperation by the participating chains during the months of July and August, consisting of shelf displays with a minimum of ten facings each of soft drinks in returnable bottles and non-returnable bottles, special floor, end island, or dump displays of at least twenty-five cases of soft drinks packed in both types of bottles, and the use of plastic stack markers and shelf strips supplied by GCMI (this material was described in the May 1958 Semi-Annual Report).

The outlets of the chains participating in the test were periodically checked by a GCMI merchandising detail man who averaged coverage of approximately 15 outlets per day throughout the duration of the program. Each chain also carried four 75-line ads in its full-page Thursday advertisements using a mat supplied by GCMI (silhouette of a boy drinking from a bottle and "Finest Soft Drinks in Sparkling Glass Bottles") featuring at least one brand of soft drinks in returnable and one-way bottles, and (3) the third phase, consisting of auditing, through headquarters, the movement of soft drinks in one-way bottles, returnable bottles, and cans for a period of six months which would provide two months' control periods before and after the in-store merchandising and promotion period. These audits are being conducted by Ford Sammis & Company and are not complete at this time due to a lag in the receipt of invoices by chain headquarters.

This test program was well received by the grocers and bottlers, and was considered a necessity by the glass container manufacturers on the West Coast due to active and aggressive campaigns conducted to promote soft drinks in metal containers by two major can companies and the United States Steel Company. It is estimated with information provided by a reliable source, that 5.9% of total [fol. 538] sales of soft drinks in the metropolitan Los Angeles area are in cans, and 2.3% in the Bay Area. Both of these percentages are considerably higher than national sales percentages.

Attention has been directed by the Subcommittee to promoting the 1958 "Your Glass Festival" kit, and at this time, the Red and White Stores (a cooperative of independents) have ordered 85 kits for 75 stores throughout California. A chain of 7 large supermarkets in Los Angeles has ordered 21 kits, and the San Diego division of one of the largest grocery chains in the country, has ordered 40 kits. Special promotional effort is being given the Northwest.

Container trends on the West Coast are being carefully and constantly watched by the Subcommittee members with particular attention being given baby foods and beer, in addition to soft drinks.

Respectfully submitted, John W. Fisher, Chairman.

[fol. 539] - GOVERNMENT'S EXHIBIT 124

Committee on Market Research and Promotion
Subcommittee on Beer Bottles

Semi-Annual Report of Activities
For the Period May 1955 to November 1955

To the Board of Trustees of
Glass Container Manufacturers Institute

No meeting of this Subcommittee has been held since the last report and in the opinion of the Committee there has been no change in the marketing pattern of beer in the Detroit market that would justify the contemplated GCMI effort in behalf of the One-Way bottle there.

Kenyon & Eckhardt, Inc. have been studying our marketing problems in the beer field, however, and have recommended the selection of a test market, which will be as nearly typical as possible, as to: (a) per capita consumption of beer, (b) distribution of returnable bottles, One-Ways and cans, (c) retail beer price relationships, and (d) local versus national brands.

The Subcommittee has approved this plan by mail and telephone contact, and has selected a test market.

The research, marketing and merchandising departments of Kenyon & Eckhardt have started a thorough study of

this market at the brewery, distributor, retailer and consumer level, and before the year-end will come back to this Subcommittee with a recommended test advertising, promotion and merchandising campaign for that city.

If approved by the Subcommittee, the campaign will be undertaken with the hope of establishing a successful pattern for the promotion of beer in glass bottles that can be extended to other markets.

The Beer Bottle Subcommittee is composed of the following members:

R. E. Delaplane, Chairman—Owens-Illinois Glass Company, W. S. Bazzett—Thatcher Glass Manufacturing Company, Inc., J. E. Bellinger—Ball Brothers Company, Inc., M. J. Jones—Obear-Nester Glass Company, E. M. Lawrence—Anchor Hocking Glass Corporation, G. A. Mengle—Brockway Glass Company, Inc., R. M. Ulmer—Armstrong Cork Company.

R. L. Cheney is Secretary.

Respectfully submitted, R. E. Delaplane, Chairman.

[fol. 540]

GOVERNMENT'S EXHIBIT 125

Committee on Market Research and Promotion
Subcommittee on Beer Bottles

Semi-Annual Report of Activities For the Period
October 1957 to May 1958

To the Board of Trustees of Glass Container
Manufacturers Institute

This Subcommittee has not met since the last semi-annual report was issued.

Virginia Program

During this period, however, a report from Ford Sammis and Company has been received by the Subcommittee members covering the "Distribution and Sales of One-Way Beer Bottles in Virginia—June, 1956 to October, 1957." This report showed, among other data, that by the end of our

1957 advertising program covering One-Way beer bottles in the state of Virginia, distribution and sale of beer in One-Ways was growing in all types of outlets in the market areas covered by the promotion, while it had dropped elsewhere in the state.

One-Way beer in the promotion markets is now carried by 77% of the supermarkets, 50% of small groceries and 29% of "On-Off" taverns. Sales of beer in One-Way bottles has reached a level of 11.3% of total packaged beer sales in these markets;—considerably above the national average. In addition, more brands are entering the state in One-Way bottles. No litter problems have been reported and it is felt that the introduction of this package in this state has been successfully accomplished.

Motivation Research Studies.

Preliminary discussions have been held by the marketing department of GCMI with a leading firm of motivation research consultants in regard to the glass container industry's over-all problems in the beer packaging field. The Subcommittee will soon review the possibility of utilizing the services of such a firm in this area.

The Beer Bottle Subcommittee is composed of the following members:

R. E. Delaplane, Chairman—Owens-Illinois Glass Company, J. E. Bellinger—Ball Brothers Company, Inc., A. G. Beltz—Brockway Glass Company, Inc., H. C. Crago—Hazel-Atlas Glass Division, Continental Can Company, Inc., L. F. Harder—Thatcher Glass Manufacturing Company, Inc., M. J. Jones—Obear-Nester Glass Corporation, E. M. Lawrence—Anchor Hocking Glass Corporation, R. M. Ulmer—Armstrong Cork Company.

R. L. Cheney is Secretary.

Respectfully submitted, R. E. Delaplane, Chairman.

[fol. 541] Committee on Market Research
 and Promotion
 Subcommittee for Public Education
 Semi-Annual Report of Activities
 For the Period October 1957 to May 1958

 To the Board of Trustees of
 Glass Container Manufacturers Institute

Louisiana

Early this year GCMI learned of a law enacted in Louisiana that prohibits the sale or purchase of gasoline or mineral spirits in glass containers. The law is identified as Louisiana Act No. 550 of 1956. Investigation disclosed that the intent of the law was to stop the sale of highly volatile petroleum products by service stations, general stores and the like from bulk containers into customer furnished glass containers as a fire prevention measure. The wording of the law is such that it is subject to an investigation which would go far beyond these limits and indeed might be held to apply to such common household items as liquid waxes, polishes, insecticides, paint thinners and solvents that use petroleum distillates as a base. As a matter of fact enforcement agents in Louisiana in several instances had held up glass packs of such products as paint thinners and solvents.

The Subcommittee for Public Education concluded that in the interest of glass container and closure members and their packer customers an effort should be made to have the purpose of Act No. 550 clarified. Accordingly, local counsel was employed by our General Counsel and Mr. H. W. Kuni made several trips to Louisiana to acquaint the appropriate state officials with the unnecessary and unintentional hardships placed upon the glass container industry. Following a series of conferences the District Attorney for the Parish of Baton Rouge and the Attorney General for the State of Louisiana in an exchange of correspondence have expressed in crystal clear terms the opinion that Louisiana Act No. 550 of 1956 "does not and could not apply to the many packaged household products that have for years been in common use and sold in this state and

throughout the United States in small glass containers generally of quart size and smaller, such as polishes and waxes, paints and paint thinners, scratch removers and furniture touch-ups, insecticides and like commercial products".

The Louisiana legislature will convene in a regular session presently and consideration is now being given to the advisability of requesting that the law be amended to specifically reflect its true intent. Regardless of whether or not amendment is requested the above mentioned opinions should eliminate any further question as to the propriety of commercial glass packs that use mineral spirits as a base.

Maryland

Although 1958 is an "off-year" the Maryland legislature was convened by Governor McKeldin for the purpose of enacting additional revenue raising legislation. Among the revenue bills was a proposal to tax every bottle of distilled spirits and alcoholic beverages, except beer, sold in Maryland. The tax would have been on a sliding scale basis depending upon capacity with a maximum of ten cents per bottle. At one point during consideration of the measure the tax would have applied to beer as well. Proponents [fol. 542] estimated that the yield would be about \$15,000,000 annually, a substantial step toward the approximately \$30,000,000 state deficit. For the purpose of identification the bill was designated as Maryland House of Delegates No. 109.

After careful consideration the Maryland legislature decided to raise the necessary additional revenue by increasing the state-wide sales tax and income taxes.

New York

A bill was introduced in New York State that would prohibit the sale of beer, soft drinks, or any other beverage in non-returnable bottles when consumed off-premise. Its sponsor felt that such legislation would materially reduce highway litter.

As would be expected virtually every bottle group in the state expressed opposition to the measure. In addition, the public education programs recommended by Keep America

Beautiful, Inc. and found to be effective in enlisting public cooperation in litter reduction campaigns were made known to the sponsor. The bill was defeated in the Committee of Judiciary to which it had been referred.

Keep America Beautiful, Inc.

This will bring you up to date on developments since our last report in September.

The annual meeting held in November re-elected Donald J. Hardenbrook, vice president of Union Bag-Camp Paper Corporation, president for another term. I was re-elected chairman of the board. Vice presidents elected were: Cecil F. Dawson of the Dixie Cup Company; Edgar J. Forio, vice president of the Coca-Cola Company and Peter J. Wojtul, vice president of Continental Can Company, Inc. Harry Kuni was re-elected treasurer.

Mr. William J. Hufstader, vice president of General Motors, was elected a director, as was William C. Stolk, president of American Can Company. Mr. Stolk relinquished his post as chairman of trustees.

Since the annual meeting we have had the good fortune of having former President Herbert Hoover express a willingness to serve as a trustee. He was duly elected in April by the Executive Committee.

During the year 1957 Keep America Beautiful, Inc. experienced further encouraging growth in both the number of members contributing to it and in the aggregate amount of contributions.

An annual conference of state and community leaders, together with representatives of KAB's National Advisory Council, was also held in November at the time of the annual meeting. It was expanded to a two-day meeting in order to accommodate the wide interests and needs of the growing number of volunteers carrying on the work in their respective communities and states. Attendance was up over 1956 and many of those who were present stated that the conference was both stimulating and inspirational. [fol. 543] Information continues to come in on the constantly expanding activity to be found in every state. More and more communities are requesting help in organizing local action groups, and in order to capitalize on this tremendous potential KAB will shortly publish a "How-to-do-

it" manual. It will feature the so-called national program formula and dramatize how maximum use, at little or no cost, can be made of the materials presently available from K.A.B.

The Boy Scouts of America have been so impressed by the special kit that was developed for Cub Scouts that they designated April as Keep America Beautiful month. About 1,800,000 youngsters and their families are involved.

A handbook for elementary school teachers is being written and we are hopeful that it can be ready for distribution before the year is out. The National Education Association has already endorsed the project.

Special news releases are being prepared for nation-wide distribution just prior to each of the major summer holiday periods. Study is also being given to an animated cartoon film and we are happy to be able to report that the Disney studios are interested in working with us on it. New and revised radio and TV material has been prepared and was widely distributed in January and February. The usual favorable comments on the professional quality of these aids have been received in large numbers by the staff.

I have not given you the complete story of what is going on but this brief statement provides you with enough benchmarks to indicate the substantial character and effectiveness of the Keep America Beautiful program.

I wish to thank the subcommittee and all members of GCMI who have assisted in the work of Keep America Beautiful, Inc. and who have participated in state and local anti-litter educational campaigns. The progress that has been made in many parts of the country is heartening and should encourage all of us to continue our efforts in this public interest activity.

Members of the Subcommittee for Public Education appointed by the Trustees to serve until May 1958 are as follows:

S. L. Rairdon, Chairman—Owens-Illinois Glass Company, S. B. DeMerell—Anchor Hocking Glass Corporation, K. C. Frazier—Olin Mathieson Chemical Corporation, F. B. Hess—Brockway Glass Company, Inc., R. H. Hetzel—Armstrong Cork Company, M. J. Jones—Obear-Nester Glass Company,

D. R. Parfitt—Thatcher Glass Manufacturing Company,
Inc., H. W. Kuni—GCMI Secretary.

Respectfully submitted, Smith L. Rairdon, Chairman.

[fol. 544]

GOVERNMENT'S EXHIBIT 126

Committee on Market Research and Promotion
Subcommittee on Beer Bottles

Semi-Annual Report of Activities For the Period
May 1958 to November 1958

To the Board of Trustees of Glass Container
Manufacturers Institute

The Subcommittee on Beer Bottles has held one meeting since the October 1957 to May 1958 report was issued. This meeting was held in the GCMI Conference Room August 21, 1958 for consideration of the initial report from the Institute for Motivational Research, Inc. concerning the packaging and merchandising in bottles—both returnables and non-returnables—as compared with cans. This was only the first phase of a proposed five phase study so no attempt was made to draw any conclusions at this time.

The Institute for Motivational Research expects to complete its studies during October so this Subcommittee has scheduled another meeting October 28, 1958 to receive the complete report.

At its August 21st meeting the Subcommittee also authorized the Institute for Motivational Research to conduct a special side study in the Pittsburgh and Toledo areas to evaluate the acceptability and results of a new style beer bottle introduced representing a departure from the conventional types. The report on this supplementary study also will be considered at the meeting scheduled in late October.

The Beer Bottle Subcommittee is composed of the following members:

E. M. Lawrence, Chairman—Anchor Hocking Glass Corporation, J. E. Bellinger—Ball Brothers Company, Inc.,

A. G. Beltz—Brockway Glass Company, Inc., H. C. Crago—Hazel-Atlas Glass Division, Continental Can Company, Inc., J. T. Helsel—Knox Glass, Inc., K. Kevin Hepp—Owens-Illinois Glass Company, P. S. Holmquest—Thatcher Glass Manufacturing Company, Inc., M. J. Jones—Obear-Nester Glass Company, G. W. Meyer—Glenshaw Glass Company, Inc., J. P. Moore—Metro Glass Company, Inc., R. M. Ulmer—Armstrong Cork Company.

R. L. Cheney is Secretary.

Respectfully submitted, E. M. Lawrence, Chairman.

[fol. 545] GOVERNMENT'S EXHIBIT 127

Committee on Market Research and Promotion
Subcommittee on Milk Bottle Promotion
Semi-Annual Report of Activities For the Period
May 1957 to September 1957

The personnel of the committee is as follows:

W. W. Springfield, Chairman—Thatcher Glass Manufacturing Company, Inc., E. S. Campbell—Northwestern Glass Company, G. F. Collins, Jr.—Liberty Glass Company, F. B. Foster, Jr.—Diamond Glass Company, H. L. Kaness—Knox Glass, Inc., R. M. Lamb, Jr.—Lamb Glass Company, G. W. Meyer—Glenshaw Glass Company, H. M. Oates—Universal Glass Products Company, W. A. Seger—Buck Glass Company, R. B. Wilhelm—Owens-Illinois Glass Company.

J. B. Carroll is secretary to the committee.

The Parent Committee and the Task Committee have not met since the last report in May. However, the Parent Committee will meet in New York on September 18, at which time they will take up the subject of the 1957-1958 advertising program.

GCMC National Milk Bottle Advertisement—May 1957

The full-page, four-color consumer advertisement, which appeared in the May issue of leading ladies' magazines with

a readership of thirty-one million, was received with considerable interest. A special merchandising kit was forwarded to more than 8,500 dairies throughout the country. Many letters of praise were received from leading authorities in the dairy field, government officials, and interested consumers. The Ladies' Home Journal, one of the magazines in which the advertisement appeared, prepared and distributed to 9,000 dairies and jobbers, and dairy association executives, a special mailer featuring the May advertisement.

The Glass Milk Bottle

Since the last semi-annual report in May, two issues of The Glass Milk Bottle were prepared and distributed to the industry. The June 1957 issue featured a center double-spread with sales ideas and promotional items for route deliverymen to further increase their sales of milk in glass bottles. This was again prepared in the popular bulletin board style for use by dairies. Other articles included information on New York State approval of gallon bottles and the May National Milk Bottle Advertisement.

The August-September issue featured the tremendous growth of large-size milk bottles with special on-the-spot survey reports covering Chicago, Cleveland, and Detroit. In addition, it contained articles describing the current Washington, D. C., and Massachusetts milk markets.

New Consumer Leaflets

The three new leaflets developed by Mr. Speaks promoted milk in quarts, half-gallons, and gallons. This series, made available to dairies at a nominal, non-profit charge, went on sale in July. To date 150,000 copies of the three pamphlets have been purchased by dairies. They are primarily used as envelope stuffers and milk box messages.

[fol. 546] Special School Milk Program Brochure

A special brochure promoting glass bottled milk for consumption by school children was distributed to 11,000 school officials. This brochure opened with a letter to school officials from Mr. R. L. Cheney, and featured a resume of available vending machines for glass milk bottles.

In addition, it pinpointed the important phases of serving milk to school children in glass, and special highlights of the Federal School Milk Program.

An individual insert instructing milk dealers in methods of increasing milk sales to schools was prepared and mailed with the school milk brochure to approximately 9,000 dairy-men.

Other Matters of Committee Interest

In late May, the Navy Department put into effect its new regulations governing milk purchasing procedure to be followed by naval base officers. This regulation is practically identical with the Army regulation which went into effect last year. Negotiations are continuing with the Air Force for acceptance by that service of a similar purchasing procedure.

The Institute continues to fill dairy requests for leaflets, ad proofs, radio and TV copy, historical information, and other material on the subject of the glass milk bottle.

Respectfully submitted, W. W. Springfield; Chairman.

[fol. 547] Committee on Market Research and Promotion
Subcommittee on Beer Bottles

Semi-Annual Report of Activities For the Period May 1957 to September 1957

To the Board of Trustees of Glass Container Manufacturers Institute

There have been no meetings of this Subcommittee since the last report, but the Committee has directed, reviewed, and approved by mail the newspaper advertising program promoting One-Way beer bottles in the state of Virginia.

Virginia Program

As announced in our last report, an intensive newspaper advertising program promoting One-Way bottles in the Richmond, Norfolk and Alexandria areas of Virginia has been conducted during the height of the beer season. The first ads appeared before the Memorial Day week-end and the advertising ran through the Labor Day week-end. Reports from the field indicate increasing interest in that area

and Ford Sammis & Company will again survey consumer purchases and attitudes towards the One-Way bottle together with distribution of this package in retail outlets.

While the Subcommittee has directed the secretary to watch and report any new developments in the beer packaging field, such as the introduction of the returnable stubby bottle by a large California brewer, there have been no new developments since our last report.

The Beer Bottle Subcommittee is composed of the following members:

R. E. Delaplane, Chairman—Owens-Illinois Glass Company, J. E. Bellinger—Ball Brothers Company, Inc., H. C. Crago—Hazel-Atlas Glass Division, Continental Can Company, Inc., J. A. Giddings—Brookway Glass Company, Inc., L. F. Harder—Thatcher Glass Manufacturing Company, Inc., M. J. Jones—Obear-Nester Glass Corporation, E. M. Lawrence—Anchor Hocking Glass Corporation, R. M. Ulmer—Armstrong Cork Company.

R. L. Cheney is Secretary.

Respectfully submitted, R. E. Delaplane, Chairman.

[fol. 548]

GOVERNMENT'S EXHIBIT 128

Traffic Committee

Semi-Annual Report of Activities
For the Period November 1954 to May 1955

To the Board of Trustees of
Glass Container Manufacturers Institute

Committee Membership

Present membership of the Standing Committee and the
West Coast Subcommittee is:

Standing Committee

Name	Company Represented
J. L. Sprowls, Chairman	Hazel-Atlas Glass Company
E. E. Allison	Anchor Hocking Glass Corporation
J. B. Belton	Brockway Glass Company, Inc.
O. A. DeCrocé	Armstrong Cork Company
W. F. McCreight	Thatcher Glass Manufacturing Co., Inc.
U. E. McFarland	Owens-Illinois Glass Company
R. H. Newton	Fairmount Glass Works, Inc.
J. W. Swoger	Knox Glass Associates, Inc.
M. B. Thomas	Ball Brothers Company, Inc.
E. Del. Wood	Chattanooga Glass Company
A. F. Hurn is Secretary to the Committee.	

West Coast Subcommittee

H. A. Lincoln, Chairman	Glass Containers, Inc.
Ralph Blackmore	Northwestern Glass Company
Frank Gorsuch	Hazel-Atlas Glass Company
Edward Lane	Crown Cork and Seal Company, Inc.
A. F. Schumacher	Owens-Illinois Glass Company
F. H. Wright is Secretary to the Subcommittee.	

Standing Committee Meetings and Conferences

Your Committee has had five (5) meetings:

November 19, 1954

December 2, 1954

December 9, 1954

February 18, 1955

March 29, 1955

several joint meetings; conferences with and hearings before rail and truck common carriers during the period covered by this Report.

[fol. 549] Standing Committee Activities

Canadian Rail Freight Classification Ratings, Less Than Carload, Commodities In Glass Containers Vs. Same Commodities In Metal Cans

Since June 26, 1953 we have endeavored to have established within Canada, the same ratings on commodities shipped in glass containers as generally apply on the same commodities shipped in metal cans. As a rule the ratings on articles in glass have been one (1) class higher (costlier) than the contemporaneous ratings on the same articles in metal cans.

This was remedied, in part, effective March 1, 1955 when the ratings on some commodities in glass were reduced to the metal can basis. We are, however, continuing our efforts for like treatment for all other ratings.

Carriers' Proposed Transfer of Present Docket No. 15879 Carload Exception Ratings (Other Than Those Applicable on Water-Borne Traffic) To Their Rating Equivalent Under The Docket No. 28300 Scale—Official Territory

A detailed description of this situation was given in our last Report.

Excluding the rates on Cullet and Glass Containers, previously and satisfactorily adjusted under G.C.M.L. formulas and those on a few other commodities (including Soda Ash) either already handled or still under consideration, the carriers have worked out a conversion method which, generally, will maintain the present charges.

The covering tariff should be released early this April

and carry an effective date of or about June 1, 1955. Such publication should greatly simplify the determination of the transportation charges.

Railroads' Proposed Transfer of Present Carload Exception or Commodity Column Ratings on Cullet, Glass Containers and Feldspar To Their Average Rating Equivalent Under The Docket No. 28300 (Uniform Basis) Scale (Within Southern Territory and Between That Territory On the One Hand and All Other United States Territory North Thereof—Lying Generally East of the Mississippi River—On the Other)

Actually, this is another phase of the preceding subject. The chief difference here is in the present basis of rates and the territorial application thereof.

Except on Cullet the carriers' proposed basis would not be satisfactory, not only because of resultant increased charges but also due to the disruption of the present competitive relationships between points of production and the common markets.

Your Committee was in attendance at and presented its views before a Public Hearing held in Chicago March 30, 1955 by a Joint Committee of Northern and Southern Railroads.

Present indications are that definite action, by the carriers, will not be taken until 60 to 90 days hence. Meanwhile we shall continue our efforts toward the retention, as closely as possible, of the present charges, taking into consideration certain unavoidable variances in the basic factors of the scales of rates involved.

[fol. 550] **Rail Class Rates—Mountain Pacific Territory (I.C.C. Docket No. 30416) and Transcontinental Territory (I.C.C. Docket No. 30660).**

These proceedings, referred to in our last two Reports, continue under the I.C.C.'s consideration.

Carload Rates, Beverages, Flavored or Phosphated, In Glass and Metal Cans—Southern States and Between That Territory On The One Hand and All Other United States Territory (East of The Rocky Mountains) On The Other

As indicated in our previous Report, the Southern Railroads, over our objections, established October 2, 1954 within the Southern States, a lower level (Canned Goods Basis) of rates on these commodities in metal cans.

Subsequently, those carriers sought to extend that basis of rates (on these canned beverages) for application between Southern Territory on the one hand and all other United States Territory (East of the Rocky Mountains) on the other.

We vigorously renewed our objections through the usual channels and orally, December 14, 1954, at a Public Hearing before the proponent Carriers Association in Atlanta, Georgia. As a result of our action the proposed "between" application was withdrawn by the carriers and effective May 2, 1955 the Canned Goods basis will be likewise applicable, within Southern Territory, on these beverages in bottles. The total affect is the restoration of the rate parity, shipments in bottles versus those in cans, heretofore long in effect, within and between the territories involved.

Truckload Rates—Beverages, Flavored or Phosphated (Nonalcoholic), Bottled and Canned—Southern Territory

About a year and a half ago the Southern Motor Carriers' Rate Conference established a reduced basis of rates on these commodities in cans from Miami, Florida, to all destinations in Southern Territory. (Prior thereto the same basis of rates applied whether packed in cans or glass.) Effective July 2, 1954 these carriers extended this reduced basis, on shipments in cans, for application from Lake Alfred, Florida. We saw no necessity for these reductions but as there were no bottling plants at these origins we could find no valid grounds for objections.

However, effective August 6, 1954, these same carriers spread this reduced basis (on canned shipments) for application from all Florida origins. With 162 bottling plants then in Florida this action was highly discriminatory.

While we were progressing action for the removal of this discrimination this reduced level for canned beverages was extended, effective September 24, 1954, for application from Chattanooga, Tennessee, and Columbus, Georgia.

On October 5, 1954 we appeared before the Carriers' Conference in Atlanta, Georgia, in support of a proposal for the inclusion of bottled beverages under this preferred basis of rates. The proposal was approved with the addition of Atlanta, Georgia, and points grouped therewith as origins for both bottled and canned beverages and the reduced level from the origins involved:

Atlanta, Georgia, and points rated therewith Columbus, Georgia Chattanooga, Tennessee Florida (all [fol. 551] origins) became effective December 10, 1954.

Motor Common Carrier Rates—Fruit Juice Crystals Or Powders, Citrus, In Metal Cans and Glass Containers, Less Than Truckload and Truckload—Plant City, Florida, To All United States Destinations East Of The Rocky Mountains

December 17, 1954 the Southern Motor Carrier Rate Conference announced consideration of reductions of:

Percent	Quantity
23½	Less Than Truckloads
12½	Truckloads

in the present rates on shipments made in metal cans.

We immediately protested pointing out that the present rates were the same for shipments in glass containers and metal cans. Furthermore, that the container supply of the Plant City processor was being actively solicited by the glass container and can manufacturers; that it naturally followed that any departure from the existing equality of rates for shipments made in one container without like treatment for shipments made in the other (container) creates a discriminatory situation. Moreover, any commodity exclusive of certain kinds of explosives, inflammatory articles, etc., which is or may be packaged in metal cans, is better or at least equally adaptable for packaging in glass containers.

The carriers handled this revision in four (4) sections.

That covering rates to Southern States Territory was disapproved January 19, 1955. The two (2) sections involving rates to territory West of the Mississippi River were disapproved in early March, 1955. The last section, covering rates to Northern Territory, East of the Mississippi River, was disapproved at the carriers' meeting of March 31, 1955.

This equitably disposes of the entire subject.

Middle Atlantic Conference Motor Common Carriers' Rates and Charges

Early last Fall these carriers were faced with a strike unless the demands of their drivers and helpers for an increase of 25¢ per hour, plus fringe benefits, were met. Initially this only involved service within the New York Metropolitan Area (comprising New York and New Jersey Territory within a radius of about 90 miles of New York City) and between it and the balance of the Middle Atlantic States Territory. Gradually these, or comparable demands, spread to other parts of the general territory.

Mediation efforts proved to be futile. Finally, after accedence to these demands by some of the larger carriers, all other carriers capitulated.

The position was advanced that resultant increased operating costs could not be absorbed by the carriers. To meet them the carriers originally estimated that they would require increased charges ranging from 5% to 27.35% (dependent on the area of haulage).

On November 10, 1954 the public was notified of these proposed increases. Your Traffic Committee promptly arranged a conference with all glass container truckers (over 80 in number) for G.C.M.I. members in an endeavor to [fol. 552] negotiate the varying bases of increase.

Following attendance at the Public Hearings on the proposed increases, and our negotiatory meetings with the carriers, the carriers revised downward the measure of increase required. This was considerably lower than originally proposed although higher than the bases we sponsored in our negotiations with the carriers.

Because of the variance in increases, effective dates thereof and the territories affected thereby, there follows an outline thereof:

Middle Atlantic Conference Tariffs	Territory Covered	Percentage Increase			G.C.M.I. Suggested
		Proposed by Originally	Carriers Finally	Effective Date	
No. 8-M	{ N.Y. Short Haul (200 Miles Maximum) Points in New York and New Jersey }	25	*10	1/10/55	10 Maximum 3¢
No. 9-K	{ Philadelphia Short Haul Area—Points in Delaware, New Jersey & Penn. }	15.5	*15 Maximum 4¢ Truckloads	2/ 7/55	10 " "
No. 35	{ Between Areas covered by Tariff No. 8-M on the one hand and Tariff No. 9-K on the other }	27.35	*15 Maximum 4¢ Truckloads	2/ 7/55	10 " "
Class Rates (Except Special Class Rates on Glass Containers, Truckloads—Applicable to & including 500 miles) in all other Tariffs	{ All other Middle Atlantic Territory }	5 to 27.35	3 to 15/ @	4/18/55	None on Special Class Rates on Glass Containers, Truckloads

* To expire 1/9/56 unless sooner cancelled, changed or extended.

@ 2/7/56

@ Will not apply on Special Class Rates, Glass Containers, Truckloads. This nonapplication saved members between \$23,000 and \$25,000 per annum.

Other increases not included in those just described are:

1. 5% surcharge—effective March 7, 1955 and scheduled to expire September 6, 1955 unless sooner cancelled, changed or extended. This applies on all rates and charges applicable between a limited part of the eastern section of [fol. 553] Delaware, New Jersey, New York and Pennsylvania on the one hand and the eastern half of New York State (generally on and east of a line running from Binghamton to Utica) on the other.

2. An increase of 5% maximum 2¢ in the commodity rates on Glass Containers, truckloads, South Jersey origins to destinations in Middle Atlantic States and southern Connecticut; an increase in the Special Commodity Rates, on Glass Containers, truckloads, from the same origins to Connecticut (other than those afore-referenced), Massachusetts and Rhode Island to the same level as the Special Class Rates, on the same commodities, within Middle Atlantic States and the establishment of certain accessorial charges.

This was a negotiated adjustment resulting in a total estimated annual increase of \$134,000 or 39% (\$86,000) less than that sought by the carriers.

Central States Motor Common Carrier Rates and Charges

To meet a wage increase aggregating 28 cents an hour, staggered over a three year period beginning February 1, 1955 and also to recover, in part, expected reductions in revenue as a result of, the Interstate Commerce Commission's decision in the "Small Shipments" Cases (I.&S. Docket No. M-4462, etc.) the carriers involved proposed, early this year, general increases ranging from 30% on shipments weighing less than 5,000 pounds to 10% on shipments weighing 5,000 pounds and more.

Your Committee was virtually in daily contact with the situation in an effort to arrange a negotiatory conference. On March 7, 1955 such a conference was arranged and the following day the Committee's views were again presented at a Public Hearing before the carriers.

Immediately following that Hearing the carriers recon-

sidered their proposed increases, amended and approved them on the following basis:

Increase—Per 100 lbs.

10 Cents—on Less Than Truckloads—less than 2,000 pounds

5 Cents—on Less Than Truckloads—2,000 to 5,000 pounds

2 Cents—on Less Than Truckloads—over 5,000 pounds

1 Cent—on Truckloads

The I.C.C.'s authority is being sought for publication as an Emergency Increase. This will afford the carriers sufficient time accurately to determine a permanent basis of increase.

On Glass Containers, truckloads, the carriers' original basis would have increased our members' annual transportation costs by over \$300,000. The approved basis will limit the increase to about \$40,000 which is within \$1,200 of the amount which would have resulted from the basis upon which your Committee's negotiations were founded.

The situation is being watched closely so as to enable resumption of negotiations so soon as the carriers have [fol. 554] determined the exact measure of a permanent general increase.

West Coast Subcommittee Activities

Two meetings of the West Coast Subcommittee have been held on November 30, 1954 and March 24, 1955 and a meeting is scheduled in the G.C.M.I. West Coast Office, April 4th.

Problems covered since the last report were Public Utilities Commission Case No. 5432, Petition No. 22, which seeks to include the communities of El Monte, Downey and Whittier in the Los Angeles Basin Territory; PUC Case No. 5478, Certification of California Radial Highway Common Carriers and Highway Contract Carriers; and PUC Case No. 5441, proposing the establishment of the San Francisco Bay Drayage Area to include the entire area bounded by San Francisco, Richmond and San Jose.

Under the direction of the Subcommittee, the West Coast Office has issued bulletins keeping the West Coast Industry informed on matters of interest concerning Traffic.

Respectfully submitted, J. L. Sprowls, Chairman.

[fol. 555] GOVERNMENT'S EXHIBIT 129

Committee on Government-Industry Relations
Semi-Annual Report of Activities For the Period
May to November 1956

To the Board of Trustees of Glass Container
Manufacturers Institute

The activities of the Committee on Government-Industry Relations during the past six months are summarized as follows:

Trade Agreements and Tariffs

Mid-year the various nations, including the United States, participating in the Geneva Conference concluded the Geneva Trade Agreement. Its effect on existing duties applicable to glass containers imported into our country may be considered relatively moderately, however, reductions were put into effect, commencing June 30, 1956, with respect to two classifications of ware provided for in the Tariff Act of 1930 as follows:

Par. 217: Unfilled bottles, jars,, n.e.s., holding less than $\frac{1}{4}$ pint; present rate of 25¢ per gross is to be successively reduced during the succeeding three years to 21¢ per gross, as of June 30, 1956.

Par. 218(e): Unfilled bottles and jars used as containers of perfume, talcum powder, toilet water, or other toilet preparations, produced otherwise than automatic machine; present rate of 45% ad valorem to be successively reduced during the succeeding three years to 38% ad valorem, as of June 30, 1956.

For background of the committee's activities in this area please see semi-annual reports during the past several years.

Food Additives Legislation

Recent publicity given to the report issued by International Symposium Against Cancer, held in Rome during August 1956, undoubtedly will stimulate attempts on the part of certain agencies in the U. S. government to have adopted during the forthcoming session of Congress so-called food additives legislation. Various bills introduced during the past several years, if passed, could have had far-reaching effects upon all segments of the container industry. Your committee will undertake to keep abreast of developments and inform you.

Census Reports on Glass Containers and Closures

Contacts have been continued with the Bureau of the Census toward improving the accuracy and coverage of the monthly reports issued under the Facts for Industry series dealing with glass containers (M77C) and closures for glass containers (M75C).

[fol. 556] Foreign Bottle Design Applications

The committee has continued to keep all glass container members informed of bottle design applications filed in foreign countries that conflict with designs that have been in general use in the United States. During the past six months such foreign applications have been for glass container designs traditionally used in this country for packaging perfumes, toiletries and beverages.

Washington Office

GCMI continues to maintain a Washington office on a nominal cost basis at 1625 K Street, N.W. Mr. Harry Kuni, secretary to the committee, spends such time in Washington as is necessary in behalf of the industry.

The Econometric Institute, Inc.

This committee arranges for certain services from The Econometric Institute, Inc., among which are oral reports at the two industry meetings on the business outlook and

two comprehensive written reports at quarterly intervals between times. Also, the services include attendance by GCMI staff members at the Econometric Institute's Annual Seminar at which are discussed basic economic factors including trends in the various segments of business, labor and government.

Other Activities

Other services provided the industry under the auspices of the Committee on Government-Industry Relations include:

(a) Contacts with government agencies, such as the Departments of Commerce and Agriculture and their agencies, such as the Business and Defense Services Administration, and Food and Drug Administration, on matters of interest to the industry and its customers.

(b) The dissemination of various data of interest compiled by the U. S. government, as for example exports of glass containers to various foreign countries and imports into our country.

(c) The circulation of information prepared by the National Canners Association on the volume of fruits and vegetables packed, especially those items such as baby foods, catsup and chili sauce, where glass is extremely used.

(d) The circulation of special reports prepared by the Department of Commerce for various industries such as Fruit Spread, and Salad Dressing, Mayonnaise and Related products.

[fol. 557] Members of the Committee on Government-Industry Relations appointed to by the Trustees to serve until May 1957 are as follows:

Parent Committee

G. F. Rieman, Chairman—Ball Brothers Company, Inc., J. S. Algeo—Hazel-Atlas Glass Company, C. G. Bensinger—Owens-Illinois Glass Company, S. B. DeMerell—Anchor Hocking Glass Corporation, F. B. Hess—Brockway Glass Company, Inc., H. F. Merritt—Solvay Process Division, Allied Chemical & Dye Corporation, H. W. Kuni—GCMI Secretary.

West Coast Subcommittee

Since previously reporting, the West Coast Subcommittee has met on April 27, July 27 and September 26, 1956.

Continued interest in the unemployment insurance developments in California has been displayed by the subcommittee. Subsequent to their study of the work accomplished by the Inter-Association Unemployment Insurance Committee and, in view of anticipated developments during the forthcoming year, it was the recommendation of the subcommittee that the West Coast manufacturers should again give financial support to this committee for the fiscal year 1956-57.

The subcommittee has maintained a close watch on air pollution developments and have reported that in the face of an industrial problem which is assuming greater and greater proportions, the glass industry in California, with one or two exceptions, has not been subject to the critical attention of the Air Pollution Control Board. The Technical Subcommittee on Air Pollution, which reports to this subcommittee, has not met since last reporting.

Attention has been given to Proposition #1, the so-called "Food in Bars" California Constitution Amendment which could, if passed, seriously affect the glass container industry within the state.

Liaison and contact with the California Conference of Industrial Association, California Manufacturers Association, California Public Utilities Commission, Inter-Association Unemployment Insurance Committee, and Central Coast Industrial Committee has been continued by the West Coast Manager under the direction of the subcommittee.

Members of the West Coast Subcommittee appointed to serve until May 1957 are as follows:

R. W. McKee, Chairman—Maywood Glass Company; E. E. Balling—Lathford-Marble Glass Company; E. S. Campbell—Northwestern Glass Company; E. L. Casey—Hazel-Atlas Glass Company; J. W. Donaldson—Ball Brothers Company, Inc.; R. J. Miedel—United Can & Glass Company; J. B. Miller—Thatcher Glass Manufacturing

Company, Inc.; H. S. Wade—Owens-Illinois Glass Company; F. H. Wright—GCMI Secretary.

Respectfully submitted, G. F. Rieman, Chairman.

[fol. 558] GOVERNMENT'S EXHIBIT 130

Committee on Market Research and Promotion
Subcommittee on Beer Bottles

Semi-Annual Report of Activities For the Period
May 1956 to November 1956

To the Board of Trustees of Glass Container
Manufacturers Institute

The Subcommittee has held two meetings since the last report, one on June 26, 1956, and the other on July 26, 1956.

Virginia Program.

The sale of malt beverages in no-deposit bottles was permitted in the State of Virginia starting July 1, 1956, for the first time in fifteen years.

After a quick but thorough study of the situation, the Subcommittee accordingly voted to advertise One-Way bottles within the State for a period of six months. Several brewers were planning to energetically merchandise One-Way bottles in Virginia on an economically-sound basis, and the elements necessary for a successful promotion appeared present. The first ads appeared on August 8. The campaign covers the Richmond, Norfolk and Alexandria markets, making use of large newspaper space with dramatic but believable photographic illustrations, clearly identifying the bottle, and accompanied by short, direct copy stressing flavor, cleanliness, social acceptability and convenience.

To measure progress and learn as much as possible from this effort for use elsewhere, Ford Sammis and Company made a survey of the State of Virginia before the campaign was launched, and will repeat it at the end of the year. These studies cover retailer and consumer

attitudes, as well as statistics on the distribution and sale of beer in the no-deposit bottles.

Great care is being exercised to handle the public relations aspects of the introduction of this package to avoid reactions which might encourage reinstatement of the ban on its sale in Virginia.

Syracuse Study.

Kenyon & Eckhardt, Inc. submitted parts I, II, and III of their Beer Container Survey covering the Syracuse market on July 26, 1956. The final report, including Part IV (consumer attitudes) and their complete analysis and recommended plans for meeting our beer bottle marketing problems will shortly be reviewed by the Subcommittee.

It is expected that these recommended plans will include a test campaign in the Syracuse area which could be undertaken early in 1957 to determine whether efforts on a broader basis would be worthwhile. Progress reports on the Virginia campaign and the Syracuse studies will be made to the industry from time to time.

[fol. 559] The Beer Bottle Subcommittee is composed of the following members:

R. E. Delaplane, Chairman—Owens-Illinois Glass Company, W. S. Bazzett—Thatcher Glass Manufacturing Company, Inc., J. E. Bellinger—Ball Brothers Company, Inc., J. A. Giddings—Brockway Glass Company, Inc., M. J. Jones—Obear-Nester Glass Company, E. M. Lawrence—Anchor Hocking Glass Corporation, R. M. Ulmer—Armstrong Cork Company.

R. L. Cheney is Secretary.

Respectfully submitted, R. E. Delaplane, Chairman.

[fol. 560] GOVERNMENT'S EXHIBIT 131

Committee on Container Design and Specifications
Semi-Annual Report of Activities For the Period
November 1955 to May 1956

To the Board of Trustees of Glass Container
Manufacturers Institute

During the period covered by the report the committee held one meeting, February 16. The following is a brief summary of matters concluded since the previous report and additional subjects of interest to the industry now being considered by the committee.

Manufacturing Tolerances for Glass Containers

Undoubtedly one of the most important accomplishments of the D & S Committee during the period covered by this report was the approval of GCMI Drawing No. C-102, showing recommended tolerances for capacity, weight and body specifications.

In pursuing this study to a satisfactory conclusion the Technical Subcommittee held numerous meetings and the individual members made contributions in the form of independent studies to provide the basic information from which the drawing was prepared.

In the committee's early discussions of the previous Drawing C-100 it became apparent that the tolerances for weight and body dimensions, formerly related to capacity ranges, would be most realistically stated if they were shown as functions of their own specifications. Also it was recognized that it would be advisable to introduce additional intermediate tolerance values in order to provide less abrupt steps in the tolerance schedules. Both of these principles were incorporated in the revised drawing.

In continuing its study of tolerances the committee is giving special consideration to beer bottles, carbonated beverage bottles and pressed ware to determine whether it would be practical to include these lines among those for which the tolerances on C-102 are recommended.

Export Shape One-Way Beer Bottle

In our previous report we referred to the committee's discussion of drawings which would show specifications for 10 oz. and 4/5 quart capacity beer bottles in this line. In view of the Alcohol and Tobacco Tax Division's conclusion that the establishment of standards of fill for malt beverages was not warranted at this time, the committee was following closely the extent of the demand for the new bottle sizes to determine whether GCMI drawings for them would be justified.

During a recent meeting it was found that the two capacity sizes in question were still more or less used only by the one brewery for which the designs were developed and there was very little general demand. Accordingly the subject was dropped from the committee's agenda.

In our previous report we announced that several brewers were using a quart capacity Export Shape Beer Bottle having $\frac{3}{8}$ fl. oz. less headspace than the one identified as Item 165-75 on GCMI Drawing No. C-16506. The committee completed its study and found that a larger bottle was rapidly being replaced by the smaller one and the [fol. 561] GCMI drawing should be changed. Accordingly prints of revised GCMI Drawing No. C-16508 were issued to the industry incorporating the new specifications.

Glass Containers for Pharmaceuticals

In a previous report we referred to joint meetings which representatives of our industry held with representatives of the American Drug Manufacturers Association to study specifications of glass containers used by the drug industry. In view of the progress reported recently by the Technical Subcommittee in its study of manufacturing tolerances the drug representatives were requested to postpone any finalization of conclusions from their work until the conclusion of the GCMI tolerance study in order that the drug people would have available to them the latest findings in the industry.

Following a delay of several months the drug representatives advised that they had decided to proceed with the completion of their study and discontinue the activity of their Glass Committee. The drug representatives found

that in conversations with individual glass manufacturers the specifications originally considered by the drug group were acceptable to the manufacturers.

There appears to be nothing further for our committee to do unless some further request for assistance is received from the drug manufacturers.

Stacking of Filled and Capped Glass Containers

The latest progress report under this subject concerns the development of recommended specifications for stacking glass containers on metal caps having flowed-in compound liners. A technical advisory group from the closure industry is assisting the Technical Subcommittee by providing technical data with special emphasis on recommended dimension limits consistent with good manufacturing procedures. Additional data needed to continue the study is in process of being obtained.

Stubby Beer Bottle

Recently the West Coast Subcommittee reported that in some instances the identification ring on the 11 ounce capacity Stubby Beer Bottle was being mistaken as an indication of the fill point. Since the approximate fill point of this bottle is $1/32$ " below the bottom of the ring there are many complaints that the bottles are underfilled. In order to assist the brewers in meeting this complaint and eliminating the confusion one of the West Coast manufacturers produced samples of a bottle having the identifying ring $1/16$ " lower. Samples of this bottle have been approved by the brewers in the Northwest and at its recent meeting the West Coast Subcommittee recommended that the GCMI drawing be revised to incorporate the change. This matter has been referred to the membership of the Parent Committee and the Technical Subcommittee.

West Coast Subcommittee

Since last reporting, the West Coast Subcommittee had held meetings December 15, 1955, February 3, 1956 and March 9, 1956.

Study has continued concerning containers incorporating shaker fitments of plastic (polyethylene and other),

metal and foil sample containers were forwarded to the [fol. 562] Parent Committee for their study. Due to the multiplicity of problems arising from the various combinations of materials used in manufacturing fitments and closures for any specific glass container, the subcommittee placed the problem before the Parent Committee for their amplification and recommendation. (This matter has been referred to the Committee on Standards for Finishes.)

Dissatisfaction expressed by brewers operating plants in the Northwest concerning the location of the shoulder bead on the 69 Series, Stubby Beer Bottle, was taken under study by the subcommittee. The brewers claimed that the approximation of the bead to fill point resulted in erroneous rejections by brewers' customers for under-fill in various instances.

As a result, a redesign lowering the bead $1/16''$ was submitted to the brewers, which was favorably accepted. The design was forwarded to the Parent Committee for their study and consideration with the recommendation that the suggested specifications be incorporated in GCM Item 69-35, and that a revision be issued and approved.

Committee Personnel

The personnel of the Committee on Container Design and Specifications has not changed since our report to you last November and is as follows:

P. S. Holmquest, Chairman—Thatcher Glass Manufacturing Co., Inc., J. S. Algeo—Hazel-Atlas Glass Company, W. S. Coffman—Foster-Forbes Glass Company, J. A. Giddings—Brockway Glass Company, Inc., M. A. Hellrung, —Owens-Illinois Glass Company, E. A. Hinkins—Tygart Valley Glass Company, E. M. Lawrence—Anchor Hocking Glass Corporation, G. F. Rieman—Ball Brothers Company, Inc., R. M. Ulmer—Armstrong Cork Company.

V. L. Hall is Secretary of the Committee.

In our report last November we stated that word had been received that Mr. Arthur Glenn was no longer associated with Brockway Glass Company and had accepted an appointment as an instructor in Mechanical Engineering at Pennsylvania State University. Accordingly, Mr. Glenn asked to be relieved of his responsibility as a mem-

ber. of the Technical Subcommittee. At its meeting on November 28, 1955 the Board of Trustees appointed Mr. James H. Wilson of Brockway Glass Company to succeed Mr. Glenn.

The Technical Subcommittee is now constituted as follows:

G. M. Stuntz, Chairman—Anchor Hocking Glass Corporation, W. F. Alderson—Owens-Illinois Glass Company, F. H. Delwo—Ball Brothers Company, Inc., C. W. Evans—Tygart Valley Glass Company, Foster Mitchell—Armstrong Cork Company, Bud Powers—Thatcher Glass Manufacturing Co., Inc., Walter Siegel—Hazel-Atlas Glass Company, J. H. Wilson—Brockway Glass Company, Inc., Harold Youkers—Knox Glass, Inc.

C. E. Wagner is Secretary of the Technical Subcommittee.

[fol. 563] The personnel of the West Coast Subcommittee has remained unchanged during the period covered by this report and is as follows:

R. H. Dallas, Chairman—Maywood Glass Company, E. S. Campbell—Northwestern Glass Company, E. L. Casey—Hazel-Atlas Glass Company, J. W. Donaldson—Ball Brothers Company, Inc., E. L. Fraser—Owens-Illinois Glass Company, W. J. Latchford—Latchford-Marble Glass Company.

Frank H. Wright is Secretary of the West Coast Subcommittee.

Conclusion

It has been extremely gratifying to me, as Chairman of this committee, to note the cooperative and progressive attitude evidenced by the individuals of this group in their contributions to the committee's work. This collaborative effort made possible the establishment of suggested new manufacturing tolerances for glass containers, representing the major accomplishment of this committee during this period. Extensive research and study was involved in this project and the committee is particularly indebted to the Technical Subcommittee for their contributions to this important project.

The glass industry is a major segment of the dynamic packaging industry. Developments and improvements in competitive packaging media make it mandatory that we, as an industry, search diligently for design and specifications for glass containers that will assure our continued growth. It will be the constant aim of this committee to develop container specifications compatible with high level production efficiency that will enable us to compete in an intensively competitive market.

Speaking for the committee, I want to express appreciation for the constructive assistance given by Messrs. Hall and Wagner. Their assistance in coordinating the various elements involved in the committee's work made possible the expeditious handling of our meetings.

Respectfully submitted, P. S. Holmquest, Chairman

[fol. 564]

GOVERNMENT'S EXHIBIT 138

**Fifth Annual Consumer Survey on Containers
Prepared For The Confidential Use Of
Can Manufacturers Institute**

**By Benton & Bowles, Inc.
December, 1947**

[fol. 565] Fifth Annual Consumer Survey on Containers
Purpose

This survey was undertaken to obtain current information on consumer attitudes toward various types of containers and to compare current attitudes with those of previous years. This is the fifth annual study conducted on this subject, and the information developed herein has been designed to be mainly comparable to information derived in previous studies.

The principal subjects covered by the current survey include:

1. General preference between cans and glass and reasons for preference.
2. Preferences for different types of containers for specific products, and willingness to pay more for preferred container.
3. Type of container believed to insure highest quality at time of purchase.
4. Type of container believed to keep food most sanitary after opening.
5. Proportion of respondents who leave unused portion of food in cans after opening.
6. Opinions regarding safety of leaving unused portion of food in cans.
7. Preferences for "fresh" vegetables and fruits vs. those packed in cans, glass, frozen packs, etc.
8. Opinions regarding the vitamin content of "fresh" food vs. food packed in various containers.
9. Type of container believed to give the greatest amount of usable food for the money during summer vs. winter.
10. Consumer buying habits of food packed in cans or glass vs. frozen food.

[fol. 566]

Procedure

Questionnaires were mailed to 3,500 members of the Benton & Bowles' Home Research Staff selected to represent a reasonably accurate cross-section of all U. S. families with respect to territories, community size and income groups.

In the current study, an effort was made to determine

what effect a "reminder" question concerning the storing of opened cans of evaporated or condensed milk (products believed to be frequently left in cans) would have on opinions regarding the safety of leaving unused portions of food (such as fruits, vegetables, juices and meats) in cans. Accordingly, one-half of the respondents were asked preliminary questions on their usage of canned evaporated or condensed milk and on whether or not they leave unused portions of milk in the can.

So that a true trend picture could be maintained, the remaining questionnaires were worded on this point as in last year's study.

Each version of the questionnaire was sent to half of the families, each half representing similar cross-sections of the country. A copy of the two questionnaires is included at the end of this report.

The questionnaires were mailed on October 10, 1947 and the survey closed on November 10, 1947 when replies had been received from 2,277 families, or 65% of the mailing.

Composition Of The Sample will be found in Table I.

Summary of Results

The results of this survey indicate that in many respects, the current attitude toward cans has not changed materially from the attitude evidenced last year, but continues to be somewhat more favorable than the attitudes evidenced in the three preceding studies (1943, 1944 and 1945).

The following paragraphs summarize the principal "highlights" revealed by the current study:

1. Consumer preference is evenly divided between cans and glass, with 37% of the respondents preferring each. The current attitude toward cans is about on the level evidenced last year (1946), but is more favorable than the attitudes revealed in the 1943, 1944, and 1945 studies.
2. Compared with last year, there has been little change in the preferential margin for cans for the majority of specific products on which the respondents were queried. However, preferences for cans are currently at a significantly higher level for shortening, coffee and beer than in any of the

previous years surveyed. For baby foods, the current preference for cans is lower, continuing the decline indicated last year.

- [fol. 567] 3. As in previous studies, the majority of the respondents believe that glass is the type of container in which they are most sure of getting the quality they want when they purchase foods. The relative position of cans on this point is now about on the level of 1943, and better than in 1944, 1945 or 1946.
4. Glass is thought by the large majority of the respondents (84%) to be the type of container which keeps food most sanitary. While this proportion has not changed materially over the past several years, the proportion who don't know which type of container keeps food most sanitary has increased to 13% from 7% in 1943.
 5. Currently, about one-eighth of the respondents (12%) claim that they leave the unused portions of foods in cans. This proportion shows little change from the 1946 (13%) or 1945 (10%) levels.
 6. While only one-eighth of the respondents (12%) state that they actually leave the unused portions of foods in cans, nearly one-quarter (23%) believe it is safe to do so. The proportion who believe it is safe is currently about on the level indicated in 1945, and slightly below the proportion indicated last year (28%).
 7. One-quarter of the respondents (25%) currently claim that they prefer to use so-called "fresh" vegetables, while 10% state that they generally prefer to use vegetables packed in cans, glass, frozen, etc. The proportions who prefer to use either "fresh" vegetables or packaged vegetables are smaller than in 1946, while the proportion who prefer to use both is correspondingly higher. Usage preferences for fruits are very similar to preferences for vegetables.
 8. More than half (57%) of the respondents believe that "fresh" food contains the most vitamins. Votes for frozen food (6%), food in cans (3%) and food in glass were all of comparatively minor

importance, while one-third of the respondents did not know.

9. Four-fifths of the respondents (80%) believe that "fresh" food gives the most food for the money in the summer months. In the winter months, food in cans is believed to give the most for the money by the greatest proportion of respondents (48%), followed by frozen foods (14%), foods in glass (13%) and "fresh" foods (6%).

[fol. 568] 10. Currently, about four-fifths of the respondents (79%) buy more food in cans or glass than frozen foods; 17% buy equal amounts; and only 4% buy more frozen foods than packed in cans or glass. These proportions are about the same as were evidenced in the 1946 survey.

Detailed Results

1. General Preference For Containers

The results of the present survey indicate that currently consumer preference is evenly divided between cans and glass, with 37% preferring each of these types of containers and the remaining 26% having no preference. Upper income and urban women are more favorably inclined toward cans, while lower income and farm women are more favorably inclined toward glass.

The current attitude of consumers toward cans shows little change from the attitude evidenced last year, but indicates a definite gain over the attitudes revealed in the three preceding studies (1943, 1944 and 1945).

	1943	1944	1945	1946	1947
Prefer cans.....	29%	23%	31%	37%	37%
Prefer glass.....	34	41	44	38	37
Have no preference.....	37	36	25	25	26
Ratio of glass over cans.....	1.00	1.44	1.29	1.02	1.00

The principal single reason for preferring cans was their indestructibility. About half the women who indicated a preference for cans (52%) gave "don't break" as their reason for preference. However, the convenience reasons (including ease of storing, of disposal, of handling, of opening, etc.) were given, in total, by a higher proportion of the

respondents (56%). Health factors, including such statements as sealed better, keeps food better, keeps food fresher, not exposed to light, etc., were listed, in total, by more than one-fifth of the housewives (22%).

The principal reasons for preferring glass are visibility of the contents (54%), various health factors such as contents need not be removed, sanitary, etc. (41%) and the fact that glass containers may be re-used (17%).

When asked what they like about cans and glass, the respondents gave reasons closely paralleling their reasons for preference.

[fol. 569] Qualities disliked about cans include chiefly a feeling that cans are unsafe (necessary to remove the contents after opening, 16%; other safety reasons, 10%); the fact that the contents are not visible (14%); and the inconvenience of using cans (13%).

The principal qualities disliked about glass containers are the fact that they can be broken (51%) and their inconvenience (difficult to dispose of, to store, to open, to handle, to remove contents, etc.) (18%).

2. Preference For Specific Products In Cans Vs. Glass

Of the 21 products listed on the questionnaire, consumers currently show a significant preference for cans over glass containers for the following 15 products:

	Prefer Cans	Prefer Glass
Motor oil.....	94%	6%
Paints.....	91	9
Baking powder.....	84	16
Talcum powder.....	83	17
Liquid soups.....	75	25
Fish.....	73	27
Meat.....	70	30
Shortening.....	68	32
Waxes and polishes.....	64	36
Bicarbonate of soda.....	63	37
Insecticides.....	63	37
Tomato juice.....	63	37
Fruit juices.....	62	38
Coffee.....	57	43
Vegetables.....	56	44

Compared with last year there has been little change in the preferential margin for cans for any of the above products with the exception of shortening and coffee. For these

two products, cans are at significantly higher level than in any of the previous years surveyed.

For the following three products, preferences are very nearly evenly divided between cans and glass:

Fruits, Beer, Disinfectants

While preference for fruits and disinfectants in cans is at about the same level as last year, preference for beer in cans is at a substantially higher level than in any of the previous four years.

[fol. 570] For the remaining three products shown below, the preferences are significantly in favor of glass over cans.

	Prefer Cans	Prefer Glass
Aspirin	31%	69%
Salad oil	34	66
Baby foods	36	64

The showing for cans is about the same as in 1946 for aspirin and salad oil. For baby foods, however, cans have lost ground, continuing the decline indicated last year.

3. Container Believed To Insure Best Quality At Time of Purchase

As in previous studies, the majority of the respondents believe that glass is the type of container in which they are most sure of getting the quality they want when they purchase foods. Currently, there is little difference in this attitude by community size or by income groups.

A comparison of the replies to this question received in all five of these surveys reveals that the relative position of cans on this point is now about on the level of 1943, and better than in 1944, 1945 or 1946.

	1943	1944	1945	1946	1947
Prefer cans	10%	6%	10%	15%	15%
Prefer glass	37	49	47	45	42
Have no preference	53	45	43	40	43
Ratio of glass over cans	1.75	2.48	2.15	1.88	1.74

The principal reasons for favoring cans in this respect are that dependable brands are put up in cans (28%), that they are sealed better (16%), that a greater variety of foods is put up in cans (11%) and that contents stay fresh.

(10%). The visibility of the contents was by far the chief reason for favoring glass containers, with 85% of those who prefer glass naming this as their reason for preference.

4. Container Believed To Keep Food Most Sanitary

The large majority of the respondents (84%) currently believe that glass is the type of container which keeps food most sanitary after the container has been opened. While this proportion has not changed materially over the past several years, there has been a small but fairly steady increase in the proportion who don't know which type of container keeps food most sanitary.

[fol. 571]

	1943	1944	1945	1946	1947
Keeps food most sanitary					
Glass.....	91%	91%	87%	86%	84%
Cans.....	2	2	2	3	3
Paper carton.....	1	•	•	•	•
Don't know.....	6	7	11	11	13

• less than 1%

Glass is believed to keep food most sanitary principally because the container can be tightly resealed (29%), unused portions of food can be stored in the container (19%), glass is more sanitary (11%), there is no danger of poisoning (11%), and there is no chemical reaction or rust (11%).

5. Proportion Who Leave Unused Portion Of Food In Cans

In total, about one-eighth of the respondents (12%) currently claim that they leave the unused portions of foods in cans. This proportion shows little change, in total, from the proportions evidenced in the 1946 (13%) or 1945 (10%) surveys.

	1945	1946	1947
Leave unused portion in cans.....	10%	13%	12%
Do not leave unused portion in cans.....	90	87	88

The proportion of women who leave food in cans currently ranges from 16% in the highest income group to 8% among women in the lowest income group, but shows relatively little variation by community size or by age of housewife.

The women who do not leave food in cans do not do so principally because they fear food poisoning (30%) feel that leaving food in cans is not safe (15%), prefer to store food in dishes or glass (12%), or fear spoilage (12%).

[fol. 572] 6. Safety of Leaving Unused Portion Of Food in Cans

In total, nearly one-quarter of the respondents (23%) currently believe it is safe to leave the unused portions of food in cans. This proportion is about on the level of 1945, and slightly below the proportion evidenced last year.

	1945	1946	1947
Believe it is safe to keep food in cans.....	23%	28%	23%
Believe it is not safe to keep food in cans.....	59	50	54
Don't know.....	21	22	23

The proportions who believe it is safe to leave the unused portions of food in cans are higher among upper income and urban housewives than among lower income women and farm women. Age apparently has little influence on their opinions in this respect.

Women who believe it is safe to leave food in cans state principally that cans are chemically treated (23%), they have heard or read that it is safe (15%), and that authorities say it's safe (9%). On the other hand, women who believe it is unsafe are chiefly afraid of poisoning (33%), of spoilage (11%) and of contamination or chemical reaction (10%).

In the current study, an effort was made to determine what effect a "reminder" question concerning the storing of opened cans of evaporated or condensed milk (products believed to be frequently left in cans) would have on opinions regarding the safety of leaving unused portions of food (such as fruits, vegetables, juices and meats) in cans. Accordingly, one-half of the respondents were asked preliminary questions on their usage of canned evaporated or condensed milk and on whether or not they leave unused portions of milk in the can.

Of these respondents, 44% use canned milk and leave unused portions in the can, 19% use canned milk but do not leave unused portions in the can, and 37% do not use canned milk.

Among the group, in total, who were asked the "re-

minder" question, only a very slightly higher proportion (26%) considered it safe to keep unused portion of food in cans than among the group who were not asked about canned milk (23%). While a relatively high proportion (34%) of the women who leave unused portions of milk in cans believe it safe to keep unused portions of food in cans, a relatively small proportion (13%) of women who do not leave unused milk in can believe it safe to leave unused portions of food in cans.

[fol. 573] 7. Preference For "Fresh" Vs. Packaged Vegetables And Fruits

One-quarter of the respondents (25%) currently claim that they prefer to use so-called "fresh" vegetables, while 10% state that they generally prefer to use vegetables packed in cans, glass, frozen, etc. Nearly two-thirds of the total respondents (65%) prefer to use both types. There is relatively little variation in preference by community size or by income level.

The proportions who prefer to use either so-called "fresh" vegetables or packaged vegetables are smaller than in 1946, while the proportion who prefer to use both is correspondingly higher.

Prefer to use:	1945	1946	1947
So-called "fresh" vegetables.....	31%	28%	25%
Vegetables packed in cans, glass, etc.....	9	15	10
Both "fresh" and packed, in cans, glass, etc....	60	57	65

Women's usage preference with regard to fruits are very similar to those for vegetables, and also show a drop-off since 1946* in the proportion who prefer to use either so-called "fresh" fruits or packaged fruits, with a corresponding increase in the proportion who prefer to use both.

Prefer to use:	1946	1947
So-called "fresh" fruits.....	25%	23%
Fruits packed in cans, glass, etc.....	14	11
Both "fresh" and packed in cans, glass, etc.....	61	66

"Convenience" (saves work and time, easy to obtain, etc.) "better flavor" and "no waste" are the principal reasons

* Fruits were not included in the 1945 survey.

for preferring packaged vegetables and fruits, while the chief reasons for preferring to use the "fresh" products are because they have better flavor and are more nourishing. Among those who prefer to use both the "fresh" and the packaged products, the principal reasons given were a preference for "fresh" vegetables and fruits when available, the convenience of using both, and the fact that using both "fresh" and packaged fruits and vegetables provides variety in the diet.

[fol. 574] From a list of 16 vegetables and 14 fruits, a significant preference is indicated for the following products in can or glass pack as opposed to the frozen or "fresh" form:

Vegetables

Tomato juice
Baked beans
Sauerkraut
Pumpkin
Mixed vegetables
Mushrooms

Fruits

Fruit cocktail
Grapefruit juice
Pineapple
Apricots
Cranberry sauce
Cherries
Grapefruit segments
Pears
Plums

Products preferred in the "fresh" form to the can, glass, or frozen pack are:

Vegetables

Carrots
Sweet potatoes
Tomatoes
Green beans
Spinach
Asparagus

Fruits

Raspberries

For these remaining products, there is no strong preference between the can or glass pack and the "fresh" form:

Vegetables

Beets
Corn
Peas
Lima beans

Fruits

Applesauce
Peaches
Prunes
Figs

None of the listed products are preferred in the frozen pack by as many as 25% of the respondents. Those preferred in the frozen pack by 10% or more women are:

Vegetables

Peas
Lima beans
Mixed vegetables
Spinach
Asparagus
Green beans

Fruits

Raspberries

[fol. 575] 8. Opinions On Vitamin Content Of "Fresh" Food Vs. Food Packed In Various Containers

When asked to state their opinion on the type of food which contains the most vitamins, 57% of the respondents voted for "fresh" food, while one-third (33%) did not know. Votes for frozen food (6%), food in cans (3%) and food in glass (1%) were all of comparatively minor importance. "Fresh" food was thought to contain the most vitamins by a somewhat higher proportion of rural women and of lower-income women than of housewives in other market divisions.

9. Opinions On Type Of Food Which Gives Most Usable Food For The Money—Summer Vs. Winter

There was a considerable division of opinion on the type of food which gives the most food for the money in the summer months as compared with the winter months. Four-fifths of the respondents (80%) believe that "fresh" food gives the most food for the money in the summer months. In the winter months, food in cans is believed to give the most for the money by the greatest proportion of respondents (48%), followed by frozen foods (14%), foods in glass (13%) and "fresh" foods (6%).

Opinions On
Type of Food
Which Gives Most
For The Money

	In The Summer Months	In The Winter Months
Foods in cans.....	4%	48%
Foods in glass.....	1	13
Frozen foods.....	3	14
"Fresh" foods.....	80	6
Don't know.....	12	19

10. Buying Habits Of Food Packed In Cans Or Glass vs. Frozen Food

Currently, about four-fifths of the respondents (79%) buy more food in cans or glass than frozen foods; 17% buy equal amounts; and only 4% buy more frozen foods than food packed in cans or glass. These proportions are about the same as were evidenced in the 1946 survey.

The use of frozen foods is somewhat less among farm women and women in the lowest income group.

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[fol. 688]

GOVERNMENT'S EXHIBIT 145

Minutes of a Special Meeting of the Administrative Committee for the Research Division of Can Manufacturers Institute, Inc., held in the office of the Institute, 60 East 42nd Street, in the City of New York, at 10:30 A.M. on Monday, November 17th, 1941.

Present: D. M. Heekin, Chairman, L. F. Gieg, H. K. Taylor, C. H. Black, E. B. Webster, H. F. White, L. H. Clark (ex-officio).

Mr. D. W. Figgis of the American Can Company; Mr. C. C. Conway and Mr. F. J. O'Brien of the Continental Can Company; Dr. Miller McClintock, Director of Research and Mr. Karl Brown of the Research Division; Mr. C. E. Sifton, Secretary of the Institute; and Mr. Edward McGarvey, Counsel, were also present.

Mr. D. M. Heekin, Chairman of the Committee, called the meeting to order and acted as Chairman. Mr. C. E. Sifton, Secretary of the Institute, acted as Secretary.

In view of the unavoidable absence of several members from the Board of Governors meeting on Monday, November 10th, Dr. Miller McClintock repeated in shorter form his comprehensive preliminary report on the work of the Research Division covering the past nine months, outlined his conclusions and made specific recommendations for the future program of the Research Division.

After discussion, it was the consensus of the members present that the Institute would make a very definite contribution by supervising the execution of the broad promotional plan submitted by Dr. McClintock, and that the steel companies only be asked to make monetary contributions for the execution of the program.

After further discussion and upon motion duly made and seconded it was unanimously

Resolved that the Administrative Committee for the Research Division approves Dr. McClintock's recommendations in principle for a five year promotional program, the first year of which includes the following activities:

1. Lay the foundation for action by a continuation of the industry's organization—the Research Division.

2. Develop immediately a broad program of public relations.
 3. Provide for maturing and testing the major parts of the Master Plan.
 4. Provide for a powerful series of industry advertisements in national magazines.
-

[fol. 689] GOVERNMENT'S EXHIBIT 147

Digest of Recommendations Presents to the Administrative Committee of the Research Division of the Can Manufacturers Institute on November 17, 1941 by Dr. Miller McClintock, Director of the Division

After the review of the materials collected and analysed in the nine months' survey of the potentialities of the can market, the Director presented the following conclusions and proposals:

1. The can industry can profitably engage in a nation-wide, continuing promotional plan as evidenced by the possibilities of the industry itself and by parallel successful types of operations carried on by other industrial groups.
2. It was further concluded that there is a very substantial hazard to the industry in not having such a promotional activity due to the development and aggressive promotion of competitive types of containers.
3. It was recommended that the plan should be of such a form as to cover all current fields of can manufacturing and the development of such new fields as are logically and economically within the range of service of metal containers, and that the plan should be a direct selling and merchandising program of nationwide extent instrumented primarily through:
 - a) National consumer magazines and the trade press
 - b) Related radio selling activities

- c) Cooperative utilization of newspapers.
- d) Outdoor advertising.

In addition, publications, pamphlets and similar literature should be developed and distributed. A broad program of public relations and publicity in scientific, professional and consumer magazines and the newspaper press should be undertaken, together with a broad program for the utilization of motion pictures.

- 4. The plan should be instrumented by the Can Manufacturers Institute, through appropriate organization.

[fol. 690] GOVERNMENT'S EXHIBIT 148

- 5. This recommendation is predicated upon the fact that among other things the Can Manufacturers Institute has a much more direct and intimate understanding of the problems of merchandising metal containers than does any other organization.
- 6. Dr. McClintock recommended that the full plan should be conceived in terms of a budget of approximately \$3,000,000 per year; this being in line, considering the breadth and complexity of the problem, with promotional expenditures of comparable, successful types of trade promotions.
- 7. It was recommended that the funds necessary to instrument the program should be derived from monies raised in proportion to base boxes of tin,terne or black plate; this measurement being the most practical and equitable means of determining contributions.
- 8. Dr. McClintock recommended that the plan should be put into operation immediately but not in its entirety, due to the defense economy and related questions of shortages as well as governmental policy to decrease consumer demands in many fields so adequately served by the can industry. However, he did recommend that essential parts of the program, suited to current conditions and designed to

lay the foundation for subsequent expanded action, be undertaken immediately in the following steps:

- a) Lay the foundation for action by a continuation of the industry's organization—the Research Division.
- b) Develop immediately a broad program of public relations.
- c) Provide for maturing and testing the major parts of the Master Plan.
- d) Provide for a powerful series of industry advertisements in national magazines.

The above is a true and accurate digest of the conclusions and recommendations which in principle were approved by the Administrative Committee of the Research Division at a meeting held on November 17, 1941.

Signed: Miller McClintock.

November 25, 1941

[fol. 691]

GOVERNMENT'S EXHIBIT 156

Minutes of a Special Meeting of the Administrative Committee for the Research Division of Can Manufacturers Institute, Inc., held in the office of the Institute, 60 East 42nd Street, in the City of New York, at 9:30 A.M. on Monday, May 11, 1942.

Present: D. M. Heekin, Chairman, C. H. Black, Vice Chairman, J. F. Hartlieb, L. F. Gieg, G. A. Milton, H. K. Taylor, H. F. White, L. H. Clark (ex-officio)

Mr. C. E. Sifton, Secretary and Treasurer of the Institute, was also present.

Mr. D. M. Heekin, Chairman of the Committee, called the meeting to order and acted as Chairman. Mr. C. E. Sifton, Secretary of the Institute, acted ex-officio as Secretary.

Mr. White spoke of the technical research project for the study of canned food values (especially vitamins) which the Can Manufacturers Institute Inc. and makers of packers cans in collaboration with the National Cannery Association had considered last year and then dropped. The project is now being reconsidered. The estimated cost of

the research would be \$36,000 a year; \$18,000 to be contributed by the National Canners Association and the remaining \$18,000 to be contributed jointly by the Research Division and the members of the Institute making packers cans. Inasmuch as the project would deal primarily with foods packed in Packers Cans, it was suggested that in fairness to makers of general line cans the contribution by the Research Division be determined as follows:

Take the total tonnage (1,685,804) of steel plate used in making Packers Cans during 1941 and divide it by the total tonnage (2,860,088) of steel plate consumed in both General Line and Packers Cans; this figures 58.9%. Then the contribution by the Research Division would be 58.9% of \$18,000 or \$10,602. The difference between \$18,000 and \$10,602, viz. \$7,398, would then be prorated between the members of the Institute making Packers Cans on the same basis proposed last year in figuring similar contributions, viz. amount of dues paid to the Institute.

After discussion, and on motion duly made and seconded, it was unanimously

Resolved that the Administrative Committee for the Research Division approves the proposed joint research plan of the N. C. A., the Can Manufacturers Institute, Inc. and the members of the Institute making packers—with reference to canned food values; and further

[fol. 692] GOVERNMENT'S EXHIBIT 158

Minutes of a Special Meeting of the Administrative Committee for the Research Division of Can Manufacturers Institute, Inc., held in the office of the Institute, 60 East 42nd Street, in the City of New York, at 10:00 A.M. on Monday, June 1, 1942.

Present:

D. M. Heekin, Chairman, C. H. Black, Vice Chairman, J. F. Hartlieb, L. F. Gieg, G. A. Milton, H. K. Taylor, H. F. White, E. B. Webster.

Mr. C. E. Sifton, Secretary and Treasurer of the Institute; Mrs. Jean Hollander, Assistant to the Executive Vice President of the Institute; and Dr. Miller McClintock, Director of Research, were also present.

Mr. D. M. Heekin, Chairman of the Committee, called the meeting to order and acted as Chairman. Mr. C. E. Sifton, Secretary of the Institute, acted ex-officio as Secretary.

Dr. Miller McClintock, Director of the Research Division, submitted two financial reports, viz.

1. A Statement of expenditures for May, 1942 against the current budget and
2. An itemized list of carry-over expenditures deductible from the 1941-1942 budgets.

Copies of the reports are attached to these minutes.

Dr. McClintock next discussed the Research Division's forthcoming "Annual Report". This report will summarize the results of the survey made during the period February 1, 1941 to April 30, 1942. He recommended that the report be turned over to Mr. White for his approval, and that Mr. White authorize its publication and determine the extent to which it should be distributed.

After a general discussion Dr. McClintock's recommendations were approved.

The Committee then went to Room 2304 in the Lincoln Building where Dr. McClintock had made arrangements for a preview of the visual presentation of the annual report. At this stage of the meeting the Committee was joined by the following members of the Research Division staff:

Miss Mary Pentland
Dr. E. L. Yordan
Mr. Adrian Williams
Miss Regina Hands.

Dr. McClintock next gave his report which was illustrated by charts projected on a screen.

[fol. 693]

GOVERNMENT'S EXHIBIT 160

Can Manufacturers Institute, Inc.
Research DivisionFinancial Statement
Operations May 1, 1942—April 30, 1943

	Yearly Budget	May dis- bursements
Management.....	\$12,000.00	\$1,000.00
Staff Salaries.....	17,500.00	1,458.33
Staff Travel.....	1,800.00	20.58
Rent & Electricity.....	3,880.00	312.50
Equipment.....	270.00	
Stationery & Office Supplies.....	600.00	20.89
Telephone, Telegraph & Postage.....	1,000.00	81.80
Publications & Subscriptions.....	750.00	7.34
Misc. Office Expenses.....	800.00	
Printing of Reports, etc.....	1,800.00	
Taxes.....	800.00	18.58
Graphic Supplies & Expenses.....	800.00	7.58
Printing and other materials for press releases, and distribution costs.....	10,000.00	
Photographs and illustrative materials for press releases.....	5,000.00	400.00*
Totals.....	\$57,000.00	\$3,327.60

* In accordance with my memorandum of May 14, 1942, to Mr. Clifford E. Sifton.

[fol. 694]

GOVERNMENT'S EXHIBIT 166

Minutes of a Special Meeting of the Administrative Committee for the Research Division of Can Manufacturers Institute, Inc., held in the office of the Institute, 60 East 42nd Street, in the City of New York, on Monday, December 14, 1942 at 1:50 P.M.

Present: D. M. Heekin, Chairman, C. H. Black, Vice Chairman, J. F. Hartlieb, L. F. Gieg, G. A. Milton, H. F. White, L. H. Clark (ex-officio).

Mr. C. E. Sifton, Secretary & Treasurer of the Institute, was also present.

Mr. D. M. Heekin, Chairman of the Committee, called the meeting to order and acted as Chairman. Mr. C. E. Sifton, Secretary of the Institute, acted ex-officio as Secretary.

Mr. Heekin read the attached report of the Research Division's Technical Committee composed of Mr. J. J. Vertrees and Mr. H. A. Goodwin.

In the discussion which followed, Mr. White asked the question, "Is there unanimity among the members of this committee that there is a consumer advertising job to be done?" The Chairman then polled each member present and it was unanimously agreed that there is a definite need for a comprehensive consumer advertising program for tin (steel) cans covering a period of about five years and that steps to put such a program into effect should be taken at once.

It was also generally agreed that the expense of the program (estimated roughly from 1 to 2 million dollars a year) should be carried by the steel people because the program would be in the interests of plate manufacturers rather than can makers. Attention was called to the fact that can companies are in a position to make containers of materials other than tin or black plate, while the profitable (for the steel people) field of manufacturing tin and black plate is in jeopardy as a result of substitutions which may be developed during war time.

After further discussion it was agreed that Mr. White should arrange for Mr. Tower and the heads of the various steel companies to meet as a group with representatives from the can industry to discuss

- (1) The immediate need for a comprehensive consumer advertising program to
 - (a) Protect the use of steel containers while we are at war, and to
 - (b) Promote their use after restrictions on steel have been lifted.
- (2) The ways and means of putting such a program in to effect.

[fol. 695] Mr. White reported that after the Administrative Committee meeting on November 9th at which Dr. McClintock's resignation was accepted, Dr. McClintock had on his own volition offered to remain as Director of Research until the end of 1942. After consulting with a majority of the Administrative Committee members, Mr. White told Dr. McClintock that the Committee would be very glad to have him continue as Director until the first of

the coming year. After discussion and on motion duly made and seconded, it was unanimously

Resolved, that Mr. White's action in extending Dr. McClintock's tenure of office as Director of Research to the end of the year 1942 be and hereby is in all respects ratified, approved and confirmed.

Meeting adjourned at 3:00 P.M.

Secretary.

This summer... all summer long...

U. S. STEEL HELPS YOU SELL

Soft Drinks in Cans!



THIS AD SELLS in 48 newspapers in 34 big markets, coast to coast. It runs June 26... July 3, 17, 31... and August 14 in:

Albany, Ohio—Banner Journal
Albany, Georgia—Banner
Albany, N. C.—Citizen Times
Atlanta, Georgia—Constitution Journal
Augusta, Georgia—Chronicle, Herald
Baltimore, Maryland—Sun
Birmingham, Alabama—Press, Post-Herald
Boston, Massachusetts—Herald, Traveler
Charlotte, N. C.—Observer
Chattanooga, Tennessee—News, Free Press, Times

Evansville, Tennessee—News-Sentinel
Los Angeles, California—Times
Louisville, Kentucky—Courier-Journal, Times
Miami, Florida—News Telegraph
Milwaukee, Wisconsin—Journal
Nashville, Tennessee—Banner-Tennessean
New Orleans, Louisiana—Times-Picayune States
Oakland, California—Tribune
Philadelphia, Pennsylvania—Bulletin
Pittsburgh, Pennsylvania—Press
St. Paul, Minnesota—Star-Tribune, Pioneer Press

Beginning June 4, United States Steel launches a continuous nationwide program to help you increase your distribution and your sales of canned soft drinks.

This program will educate the consumer to a greater acceptance and preference for soft drinks in cans. It will demonstrate to the supermarket industry the advantages and new opportunities in merchandising soft drinks in cans. Impact at the national level, at the local level, and in the trade will give you the advertising and promotional help you need to make *canned* soft drinks really take hold.

IN NEWSPAPERS

ALL SUMMER LONG

... ads will convince consumers to try "the new way to buy soft drinks—in cans." Large-space ads, like the one shown here, will drive home the advantages of cans, in 34 markets, during your peak selling season from June 26 through mid-August.

ON MORNING TV

EVERY WEEK

... beginning June 4, throughout the year, commercials will demonstrate the advantages of canned soft drinks twice a week to an audience of 2,200,000. The show is CBS MORNING NEWS, carried over 65 key stations, coast to coast.

ON EVENING TV

REACHING 25,000,000 VIEWERS

Sheila Jackson and Jack Brand, on the U.S. STEEL HOUR, will "sell" canned soft drinks over 135 stations during July. So, even if the newspaper ads do not reach your market, your customers will know

Soft Drinks in Cans!



In your store...

LESS TROUBLE...LESS LABOR

WITH Soft Drinks in Cans!

- ★ **NO BREAKAGE** with durable cans!
- ★ **EASY HANDLING** with lightweight cans!
- ★ **EASY STACKING** with flat-topped cans!
- ★ **GOOD DISPLAY** with labeled cans!
- ★ **NO RETURNS** with disposable cans!

How to
Cash in

ADVERTISE canned soft drinks
DISPLAY canned soft drinks
TIME your canned soft drink promotions to take full advantage of U. S. Steel's advertising.



United States Steel

Pittsburgh 30, Pennsylvania

THE NEW WAY TO BUY...THE NEW WAY TO SELL SOFT DRINKS—IN CANS!



THIS AD SELLS in 48 newspapers in 34 big markets, coast to coast. It runs June 26 . . . July 3, 17, 31 . . . and August 10 in:

Akron, Ohio—Banner Journal
Albany, Georgia—Herald
Asheville, N. C.—Citizen Times
Atlanta, Georgia—Constitution Journal
Augusta, Georgia—Chronicle, Herald
Baltimore, Maryland—Sun
Birmingham, Alabama—Post-Herald
Boston, Massachusetts—Herald, Traveler
Charlotte, N. C.—Observer
Chattanooga, Tennessee—Post, Free Press, Times
Chicago, Illinois—Globe
Cleveland, Ohio—Press
Columbus, Georgia—Ledger, Enquirer
Columbus, Ohio—Dispatch
Dallas, Texas—Times Herald
Detroit, Michigan—Evening Star
Houston, Texas—Chronicle

Knoxville, Tennessee—News-Sentinel
Los Angeles, California—Times
Louisville, Kentucky—Courier-Journal, Times
Miami, Georgia—Evening Telegraph
Milwaukee, Wisconsin—Journal
Nashville, Tennessee—Banner, Tennessean
New Orleans, Louisiana—Times-Picayune States
Oakland, California—Tribune
Philadelphia, Pennsylvania—Bulletin
Pittsburgh, Pennsylvania—Press
St. Paul, Minnesota—Dispatch, Pioneer Press
San Francisco, California—Call, Bulletin
Seattle, Washington—Times
Shreveport, Louisiana—Journal, Times
Tampa, Florida—Tribune
Wheatridge Group, New York
Youngstown, Ohio—Vindicator

ADVERTISE CANNED SOFT DRINKS
ALERT YOUR SALESPeOPLE

Beginning June 4, United States Steel launches a continuous nationwide program to help you increase your distribution and your sales of canned soft drinks.

This program will educate the consumer to a greater acceptance and preference for soft drinks in cans. It will demonstrate to the supermarket industry the advantages and new opportunities in merchandising soft drinks in cans. Impact at the national level, at the local level, and in the trade will give you the advertising and promotional help you need to make canned soft drinks really take hold.

IN NEWSPAPERS

ALL SUMMER LONG

. . . ads will convince consumers to try "the new way to buy soft drinks—in cans." Large-space ads, like the one shown here, will drive home the advantages of cans, in 34 markets, during your peak selling season from June 26 through mid-August.

ON MORNING TV

EVERY WEEK

. . . beginning June 4, throughout the year, commercials will demonstrate the advantages of canned soft drinks twice a week to an audience of 2,200,000. The show is CBS MORNING NEWS, carried over 65 key stations, coast to coast.

ON EVENING TV

REACHING 25,000,000 VIEWERS

Sheila Jackson and Jack Brand, on the U.S. STEEL HOUR, will "sell" canned soft drinks over 135 stations during July. So, even if the newspaper ads do not reach your market, your customers will know about and want to try "the new way to buy soft drinks—in cans."

United States Steel - Pittsburgh 30, Pa.
USS is a registered trademark



United States Steel

THE NEW WAY TO BUY... THE NEW WAY TO SELL SOFT DRINKS—IN CANS!

Advertisement prepared by Batten, Barton, Durstine & Osborn, Inc., Pgh. to appear in:
BOTTLING INDUSTRY—JUNE 17, JULY 1, 1958
NATIONAL BOTTLERS' GAZETTE—JUNE 1958
AMERICAN SOFT DRINK JOURNAL—JUNE 1958
* P. O. Pgh. 8-1614

"It's best in cans"

SAY SOFT DRINK CANS



Get canned soft drinks
at your favorite store-
they're convenient,
they're modern,
they're worth much more!



'Cause cans don't break
and cans are light...



Cans chill quick-
seal flavor in tight!

Cans store best-
you can even stack...



...and you NEVER.





Get canned soft drinks
at your favorite store-
they're convenient,
they're modern,
they're worth much more!



'Cause cans don't break
and cans are light...



Cans chill quick-
seal flavor in tight!

Cans store best-
you can even stack...



...and you NEVER
have to take 'em back!



Now Available at Your Grocers



United States Steel



Lightens your work
Brightens your leisure
Widens your world

TO BUILD NEW SALES FOR YOU U. S. STEEL PROMOTES

Soft Drinks in Cans!



In your store ...
LESS TROUBLE ... LESS LABOR

WITH Soft Drinks in Cans!

- ★ **NO RETURNS** with disposable cans!
- ★ **EASY HANDLING** with lightweight cans!
- ★ **EASY STACKING** with flat-topped cans!
- ★ **GOOD DISPLAY** with labeled cans!
- ★ **NO BREAKAGE** with durable cans!

Beginning June 4, United States Steel launches a continuous, nationwide program to help you increase your sales of canned soft drinks. A powerful, sales-building advertising program will drive home to consumers the lightweight, space-saving, no-return, quick-chilling, no-breakage features of soft drinks in cans ... will create a public acceptance and preference for canned soft drinks. It is a great opportunity for you to increase total soft drink sales by building canned soft drink sales. Here's the program:

IN NEWSPAPERS

ALL SUMMER LONG

... consumers will get the urge to "try the new way to buy soft drinks—in cans." Large-space ads, like the one shown here, will drive home the advantages of cans, in 34 markets, during your peak selling season from June 26 through mid-August.

ON MORNING TV

EVERY WEEK

... for forty consecutive weeks beginning June 4, commercials will demonstrate the advantages of canned soft drinks twice a week to an audience of 2,200,000. The show is CBS MORNING NEWS, carried over 65 key stations, coast to coast.

ON EVENING TV

REACHING 25,000,000 VIEWERS...

Sheila Jackson and Jack Brand, on the U.S. STEEL HOUR, will "sell" canned soft drinks over 135 stations during July and August. So, even if the newspaper ads do not reach your market, your customers will know about and want to try "the new way to buy soft drinks—in cans."

U. S. STEEL PROMOTES

Soft Drinks in Cans!



In your store ...
LESS TROUBLE ... LESS LABOR

WITH Soft Drinks in Cans!

- ★ **NO RETURNS** with disposable cans!
- ★ **EASY HANDLING** with lightweight cans!
- ★ **EASY STACKING** with flat-topped cans!
- ★ **GOOD DISPLAY** with labeled cans!
- ★ **NO BREAKAGE** with durable cans!

**How to
Cash in**

ADVERTISE canned soft drinks
DISPLAY canned soft drinks -
TIME your canned soft drink promotions to take full advantage of U. S. Steel's advertising.

Beginning June 4, United States Steel launches a continuous, nationwide program to help you increase your sales of canned soft drinks. A powerful, sales-building advertising program will drive home to consumers the lightweight, space-saving, no-return, quick-chilling, no-breakage features of soft drinks in cans ... will create a public acceptance and preference for canned soft drinks. It is a great opportunity for you to increase total soft drink sales by building canned soft drink sales. Here's the program:

IN NEWSPAPERS

ALL SUMMER LONG ... consumers will get the urge to "try the new way to buy soft drinks—in cans." Large-space ads, like the one shown here, will drive home the advantages of cans, in 34 markets, during your peak selling season from June 26 through mid-August.

ON MORNING TV

EVERY WEEK ... for forty consecutive weeks beginning June 4, commercials will demonstrate the advantages of canned soft drinks twice a week to an audience of 2,200,000. The show is CBS MORNING NEWS, carried over 65 key stations, coast to coast.

ON EVENING TV

REACHING 25,000,000 VIEWERS... Sheila Jackson and Jack Brand, on the U. S. STEEL HOUR, will "sell" canned soft drinks over 135 stations during July and August. So, even if the newspaper ads do not reach your market, your customers will know about and want to try "the new way to buy soft drinks—in cans."

United States Steel • Pittsburgh 30, Pa.
USSS is a registered trademark



United States Steel

THE NEW WAY TO BUY...THE NEW WAY TO SELL SOFT DRINKS—IN CANS!

Advertisement prepared by Botten, Borton, Durstine & Osborn, Inc., Pgh. to appear in:
SUPER MARKET MERCHANDISING—JUNE 1958
SUPERMARKET NEWS—JUNE 30, 1958
FOOD TOPICS—JUNE 23, 1958
* P. O. Pgh. 8-1843

2257

TO BUILD NEW SALES FOR YOU U.S. STEEL PROMOTES

Soft Drinks in Cans!

2258



In your store . . .

LESS TROUBLE...LESS LABOR**WITH Soft Drinks in Cans!**

- ★ **NO BREAKAGE** with durable cans!
- ★ **EASY HANDLING** with lightweight cans!
- ★ **EASY STACKING** with flat-topped cans!
- ★ **GOOD DISPLAY** with labeled cans!
- ★ **NO RETURNS** with disposable cans!

Beginning June 4, United States Steel launches a continuous, nationwide program to help you increase your sales of canned soft drinks. A powerful, sales-building advertising program will drive home to consumers the lightweight, space-saving, no-return, quick-chilling, no-breakage features of soft drinks in cans . . . will create a public acceptance and preference for canned soft drinks. It is a great opportunity for you to increase total soft drink sales by building canned soft drink sales. Here's the program:

IN NEWSPAPERS**ALL SUMMER LONG**

. . . consumers will get the urge to "try the new way to buy soft drinks—in cans." Large-space ads, like the one shown here, will drive home the advantages of cans, in 37 markets, during your peak selling season from June 19 through mid-August.

ON MORNING TV**EVERY WEEK**

. . . for forty consecutive weeks beginning June 4, commercials will demonstrate the advantages of canned soft drinks twice a week to an audience of 2,200,000. The show is CBS MORNING NEWS, carried over 65 key stations, coast to coast.

ON EVENING TV**REACHING 25,000,000 VIEWERS**

Sheila Jackson and Jack Brand, on the U.S. STEEL HOUR, will "sell" canned soft drinks over 135 stations during July and August. So, even if the newspaper ads do not reach your market, your customers will know about and want to try "the new way to buy soft drinks—in cans."

[fol. 700]

GOVERNMENT'S EXHIBIT 174

INCREASED CONSUMER IMPACT has been added to United States Steel's Soft Drinks in Cans program for the summer months. On alternate Wednesdays, beginning July 9 at 11 AM-EDT, U. S. Steel will sponsor 15 minutes of the televised Arthur Godfrey Show over a minimum of 60 stations of the CBS Television Network. The schedule will also include one commercial every other Friday on the Godfrey Show beginning July 4. Some of these commercials will use that personal Godfrey salesmanship and others will be films. Godfrey replaces the CBS morning News in the soft drink program, and CBS advises that the morning news will resume in October.

Arthur Godfrey for years has been known as the nation's number one salesman. Millions of Americans, people from all strata of life, immediately identify themselves with him and with the products he advertises. The warmth, the vitality and the humor that have made Godfrey the greatest entertainer-salesman in television will provide a perfect medium to tell Americans everywhere of the advantages of soft drinks in cans.



In addition to the Godfrey Show, U. S. Steel's Soft Drinks in Cans program includes commercials on the U. S. Steel Hour on July 2 and July 30, and an intensive newspaper advertising schedule in 50 papers covering 34 markets where canned soft drinks have maximum super market distribution. The advertisement which will appear is reproduced here.

This newspaper ad will remind consumers, as will Arthur Godfrey, of the many advantages of Soft Drinks in Cans.



"It's best in cans"
SAY SOFT DRINK FANS



- Lightweight, easy to handle
- Space saving
- No deposits to pay, no empties to return
- Chill quickly
- No breakage

For more information write:
Robert C. Myers, Director
Market Development Division
United States Steel Corporation
525 William Penn Plaza
Pittsburgh 30, Pa.



United States Steel

[fol: 702]



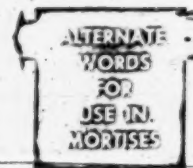
GOVERNMENT'S EXHIBIT 175



Your
Favorite
SOFT
DRINKS
IN CANS



OUTINGS
Beach Parties
CAMPING



WORTH MORE
CHILLS QUICKLY
NO DEPOSIT
CONVENIENT
NO RETURN

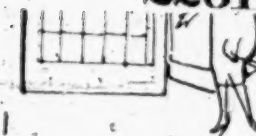
...and you NEVER
have to take 'em back!

Now Available at Your Grocers



Lightens your work.
Brightens your income.
Widens your world.

2261



The above "ready-to-run" ad can be offered to bottlers or distributors, who may want to list retail outlets or its elements may be cut out for use to suit any of your advertisers. Every Bottler, Canner and franchiser of soft drinks is being told of the promotion opportunities in this program through American Can Company's MiraCan Merchandiser.

SEE BACK PAGE for Examples of How Well These Spots Work in Food Store Advertising...

Why the Emphasis is Growing on SOFT DRINKS IN CANS

1. **MORE CONVENIENT FOR CONSUMERS** because there are no deposits and no returns; they are easier to carry and chill quickly. See Food Page story on back.
2. **EASIER FOR STORES TO HANDLE** because they stack easily, may be displayed more advantageously and in less space, and eliminate costly handling of returns. See Business Page story on back page.

What U.S. Steel is Doing About It

1. **PLACING ADVERTISING IN NEWSPAPERS IN 33 MARKETS** this year. Paving the way for other markets with umbrella coverage on U. S. Steel's network TV programs.
2. **FURNISHING NEWSPAPERS EVERYWHERE** with this service to "tool them up" for helping Food Retailers and Bottlers advertise Soft Drinks in Cans.

Ready to Pep Up *Food Store Soft Drink Sales*

Approximately 100,000 Food Retailers are being alerted through Continental Can Company's *Merchandise Digest* to the fact

that newspapers will have the ad building tools in this **FREE SERVICE** available **FOR USE** IN THEIR ADVERTISING



There's A New Way to Buy
SOFT DRINKS



Pointing the Way to Possible
NEW LINAGE

"It's best in cans." SAY SOFT DRINK FANS

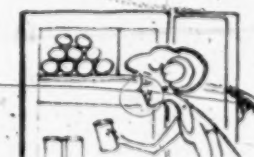


Get canned soft drinks
at your favorite store
-they're convenient,
they're modern
they're worth much more

Cause cans don't break
and cans are light

Cans chill quick-
seal flavor in tight!

Cans store best

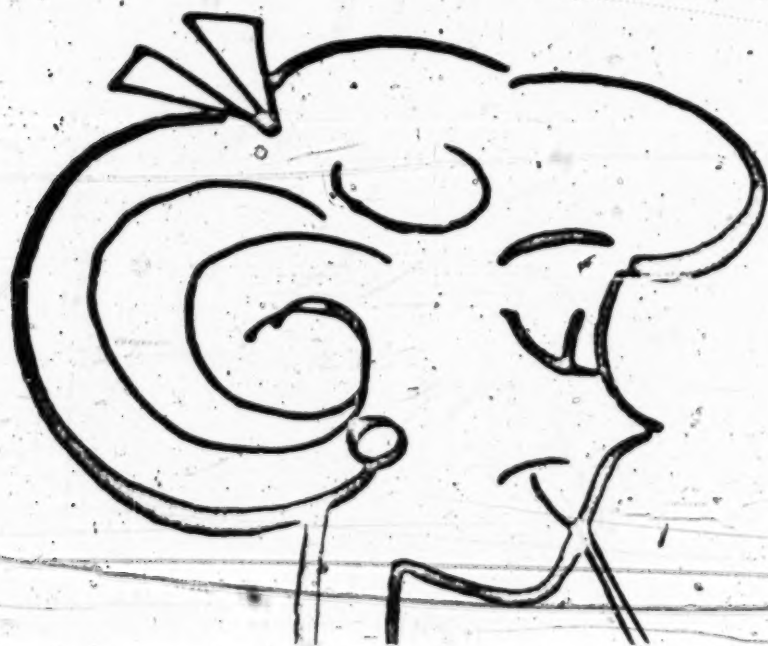


U.S. STEEL'S 1958 SOFT DRINKS IN CANS



NEWSPAPER

AD MAT SERVICE



Produced and made available to you FREE
(you need only to request the mats illustrated)
so that you may be equipped to furnish your

SUPERMARKETS
SUPERETTES
GROCERS'
BOTTLERS

with ideas and illustrations for advertising
SOFT DRINKS IN CANS.



**YOU MAY NOT NOW...
BUT YOU WILL, SOON**

Although there may be no extensive distribution of soft drinks in cans in your area now, this product is growing in popularity, by leaps and bounds. Retail store and consumer demand is radiating from 33 markets. This service will be useful to you some time soon, if not right now.

So Keep This On TAP!

**Be Sure
to See**

New STEELMARK Year 'Round Service ...

New 1958 OPERATION SNOWFLAKE Service

SUPERMARKETS SUPERETTES GROCERS' BOTTLERS

with ideas and illustrations for advertising
SOFT DRINKS IN CANS ...

This service may also help you to gain some extra
linage by selling local sponsorship and tie-ins for the
four-column ad inside, to food stores and bottlers
who want to identify themselves as the source for
the new convenient way to buy soft drinks.

SEE THE INSIDE AND BACK PAGES for the story of
(1) "SOFT DRINKS IN CANS," (2) what it means to
mass merchandising and to consumers ... (3) for the
ad making tools now ready for you to offer adver-
tisers in demonstrating that you are in step with their
merchandising problems, and (4) for suggestions on
how to utilize these ad building tools in layouts.

FILL OUT AND MAIL coupon on back page to make
sure you have the FREE ad making tools on hand
when you need them.



U.S. Steel will promote

soft drinks— in cans

for HOME USE

In all its advertising to consumers, U. S. Steel will be building new in-home use of soft drinks in cans. It will demonstrate dramatically these five advantages of soft drinks in cans:

- Lightweight, easy to handle
- Space saving
- No deposits to pay, no empties to return
- Chill quickly
- No breakage

Refreshments for picnics, ball games, beach parties, barbecues and other outdoor events are also big reasons for people to buy soft drinks in cans. So U. S. Steel will emphasize these uses, too, during its summer-time advertising program.



FOR THE FIRST TIME, the advantages of soft drinks in cans will be brought home dramatically to American consumers. This ad will appear throughout the summer in 50 newspapers in 35 markets. It will be backed up with extensive network television commercials. It will stimulate consumers to look for soft drinks in cans. Complete advertising schedule is shown inside this brochure.

"It's best in cans" SAY SOFT DRINK CANS



For more information, write:
Mr. Robert C. Myers, Director
Market Development Department
United States Steel Corporation
Pittsburgh 30, Pennsylvania



Lightens your work
Brightens your labor
Widens your world



United States Steel

Printed in U.S.A.

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INS

USE

Steel will be building new
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if people to buy soft drinks
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FOR THE FIRST TIME, the advantages of soft drinks in cans will be brought home dramatically to American consumers. This ad will appear throughout the summer in 50 newspapers in 35 markets. It will be backed up with extensive network television commercials. It will stimulate consumers to look for soft drinks in cans. Complete advertising schedule is shown inside this brochure.

"It's best in cans" SAY SOFT DRINK CANS



Get canned soft drinks
at your favorite store—
they're convenient,
they're modern,
they're worth much more!

Cause cans don't break
and cans are light.

Cans chill quick—
seal flavor in tight!

Cans store best—
you can even stack...

...and you NEVER
have to take 'em back!

Now Available at Your Own...

United States Steel

For more information, write:
Mr. Robert C. Myers, Director
Market Development Department
United States Steel Corporation
Pittsburgh 30, Pennsylvania



United States Steel



Lights your work
Brightens your home
Widens your world

Now, to build new sales
for you

U.S. STEEL promotes

in cans!



Starting June 4, nationally and locally, in newspapers and on television, U. S. Steel is selling the consumer. Selling morning, afternoon and night. Selling week after week after week. Selling the advantages of soft drinks in cans. Showing the convenience of disposable, lightweight cans. This continuous advertising will create a stronger acceptance and preference for soft drinks in cans. It will help you to increase your total sales of soft drinks.

IN THE MORNING

television

sells for you

Every Wednesday, for 40 consecutive weeks, U. S. Steel commercials will demonstrate the advantages of canned soft drinks to a television audience of 1,200,000 consumers in 56 key markets. The show is CBS Morning News, a popular early morning* newscast featuring Richard Heffron and Grant Tinker.

Coming in the morning when the Reynolds plans for shopping needs, these memorable commercials will encourage shoppers to look for canned soft drinks in the stores. Make it easy for them. Advertise, promote, display your canned soft drinks.

*Due to limited space, the exact time is not given.

[illegible]

These studies are subject to change by the authors.

CBS NEWS—Every Wednesday, for 40 weeks.

IN THE AFTERNOON

newspapers

sell for you

Businesses selling products and services are expected to experience a decline in sales during the summer, from June 18 through the August 17, according to the survey. The survey also found that consumers in 10 markets will go online to try the new way to buy soft drinks or cans. These ads will promote the Consumer on soft drinks or cans. Schedule on a paid-advertising to be it.

NEWSPAPER SERVICE

Daily newspapers will receive a complete set of ad-building ideas and tips that will enable you, easily, to make up your own canned copy. And why be sure to get in touch with your newspaper to see how this service can help you.

[illegible]

June 26-July 2, 1930-August 13

IN THE EVENING

television

sells for you

On July 24th again on July 30, Sheila Jackson and Jack Brand, U.S. Steel's commercial promotion team, will take the canned soft drink story out to 200,000 young adults, coast to coast, on the United States Steel Hour. They will demonstrate the advantages of canned soft drinks and urge viewers to try this new way to buy soft drinks—in cans. Canned soft drinks will also be featured on other U.S. Steel Hour commercials during July and August.



United States Steel

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[illegible]

M.B. STEEL HOUSE—July 2, July 30 on 135 Network Stations

These authors also noted a strong correlation between the number of

[fol. 707]

GOVERNMENT'S EXHIBIT 177



If you have been handling canned soft drinks, you know that they provide an easy and convenient way to increase total soft drink volume. Because, for the most part, canned soft drink sales are extra sales.

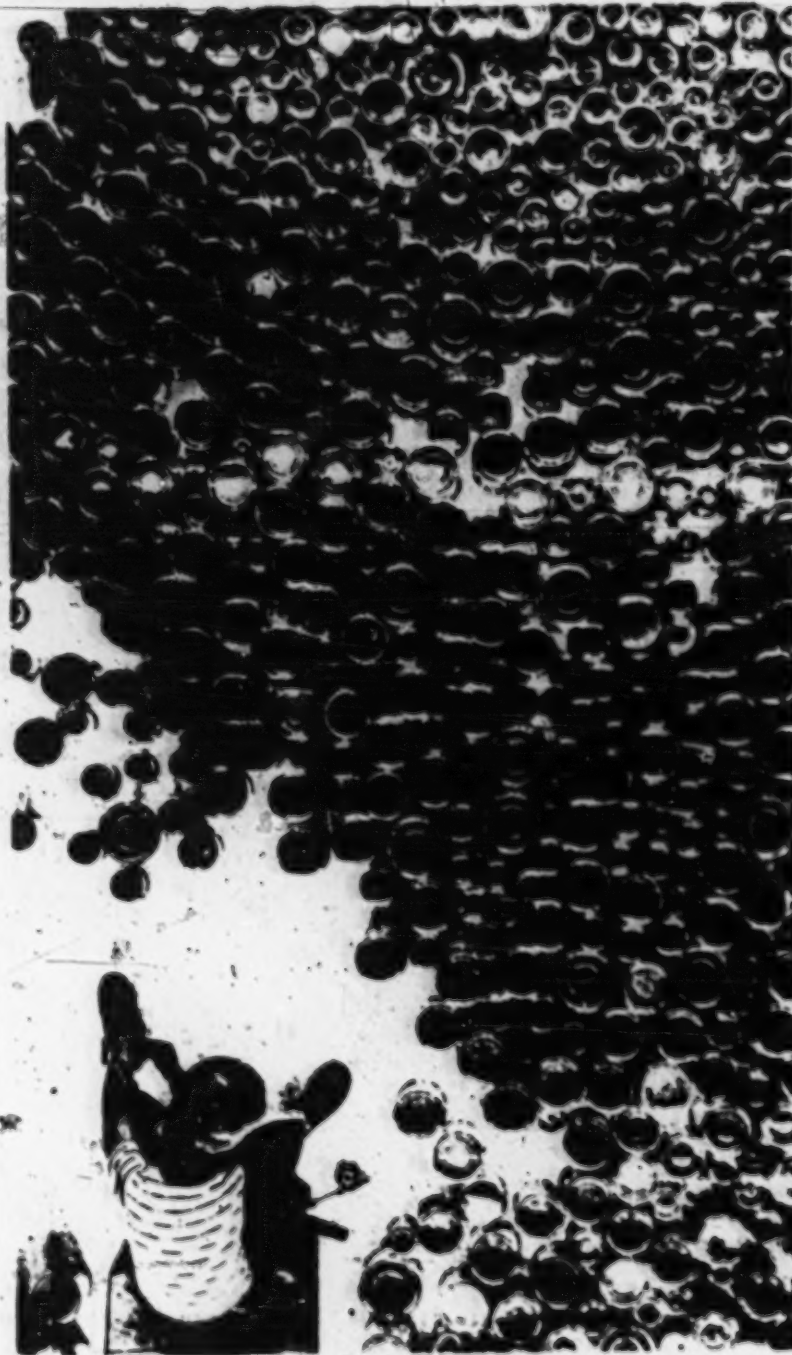
And now, United States Steel Corporation is helping you to gain this extra volume. Beginning June 4, a continuous consumer advertising program in newspapers and on television demonstrates the important advantages of soft drinks in cans and will create a stronger acceptance and preference for soft drinks in cans. In trade advertising, bottlers are being urged to coordinate their sales promotion and advertising with United States Steel's national effort.

You can capitalize on the consumer's new awareness of soft drinks in cans: Feature canned soft drinks in your store. Feature them in your advertising. Time your promotional activity to take full advantage of U.S. Steel's program. You will find a complete timetable and description of this program in the enclosed folder.

Remember, soft drinks in cans not only help you to sell more but also save you trouble and labor. They eliminate the nuisance of handling returns; they are lightweight and easy to handle; they are easy to stack and display; and they won't break because cans are 99% steel.

Today's **USS** steels

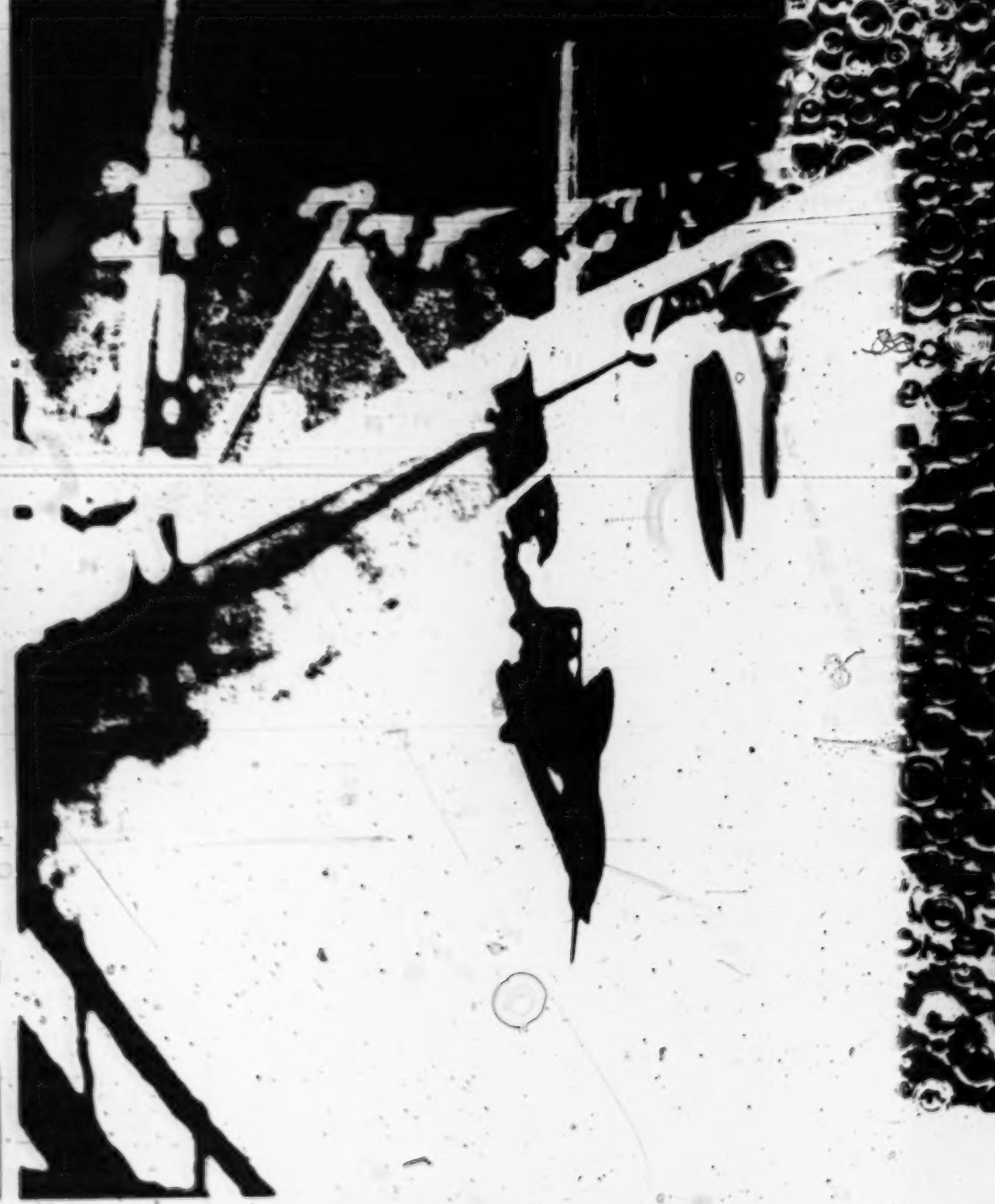
lighten your work... ♦ brighten your leisure... ♦ widen your world...



What does a growing boy need? Food—good, hearty, plenty of it. Like the amazing variety of flavorful foods packed in convenient steel cans. Sea foods, meats cooked to perfection, fruits and vegetables picked at their peak, countless delicacies... the start of a banquet with the flip of a lid.

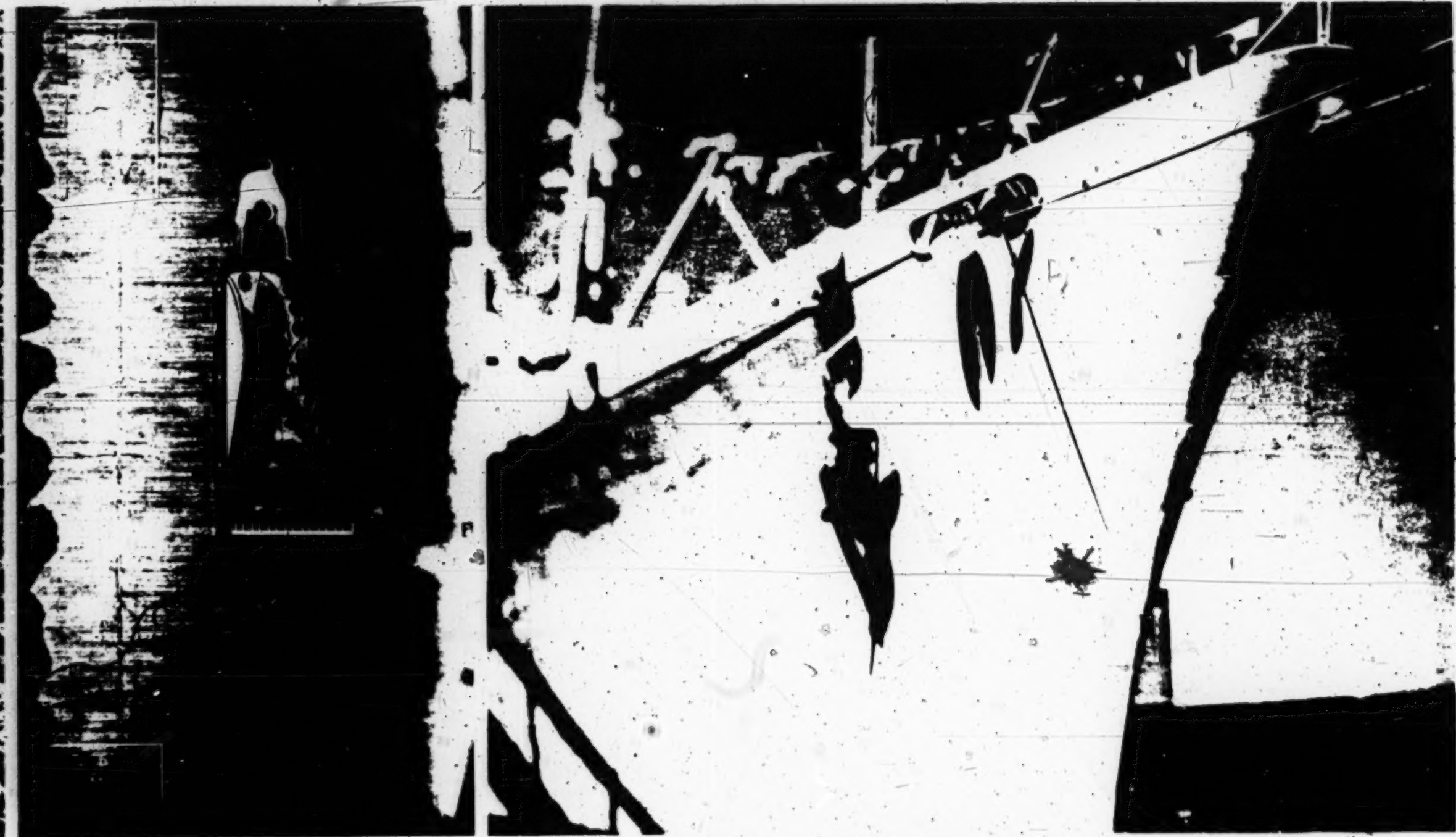


Steel makes music. Whether at the concert, the dance or at home, your enjoyment of piano music depends on strings of the finest steel... wires so strong and resilient, so accurate in diameter and smooth in finish that they can bring the continued pleasure of perfect tones.



Steel for a floating palace. When your sleek, modern luxury liner glides out you're off to make a host of new friends... see the wonders of other lands; in critical part—from hull plates to turbine blades—the new high-speed liners depend on the unique combination of strength and lightness found only in today's steels.

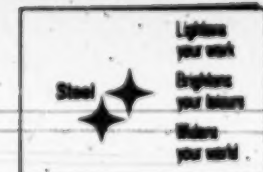
rk... ♦ brighten your leisure... ♦ widen your world...



Steel makes music. Whether at the concert, the dance or at home, your enjoyment of piano music depends on strings of the finest steel... wires so strong and resilient, so accurate in diameter and smooth in finish that they can bring the continued pleasure of perfect tones.

Steel for a floating palace. When your sleek, modern luxury liner glides out you're off to make a host of new friends... see the wonders of other lands; in almost every critical part—from hull plates to turbine blades—the new high-speed liners depend on the unique combination of strength and lightness found only in today's steels.

USS United States Steel



This mark tells you a product is made of steel. Look for it when you buy.

[fol. 710]

GOVERNMENT'S EXHIBIT 185



THE



I.S.

GLASS-FORMING MACHINES

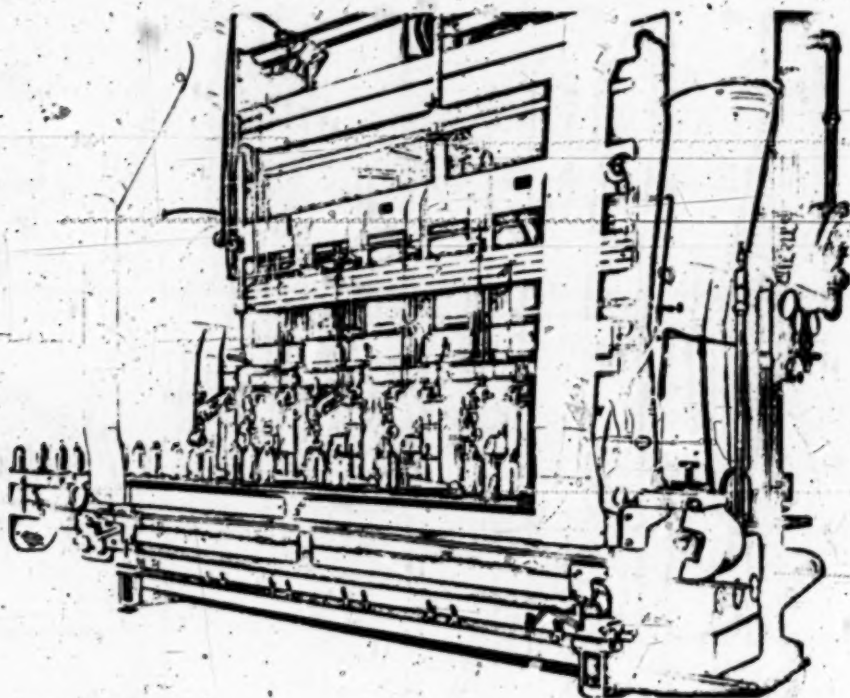
MANUFACTURED BY THE
 EMHART MFG. COMPANY
 100 YEARS OF PROGRESS



2269

[fol. 711]

6-SECTION I.S. MACHINE



SIX-SECTION I.S. MACHINE
and 117 CONVEYOR

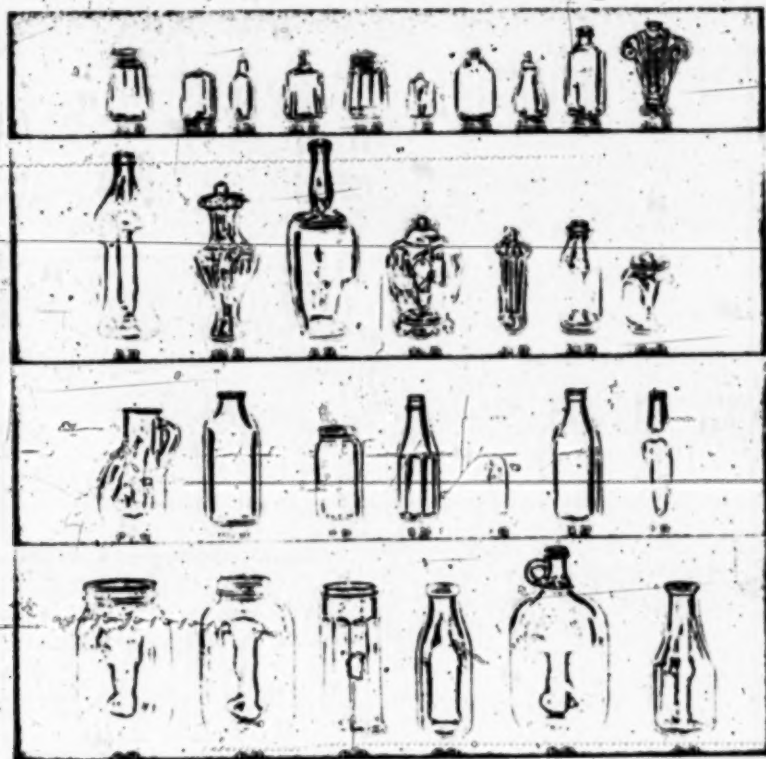
BASIC EQUIPMENT consists of the I.S. Machine and conveyor without any accessories or auxiliary attachments.

AUXILIARY EQUIPMENT and ACCESSORIES comprise those parts required for meeting specifications of the ware to be made. These include delivery equipment, mold-holding equipment, conveyor extensions, compressed-air regulators, sprockets and chain, and similar items.

ATTACHMENTS are those devices which can be applied to any I.S. Machine to change the type of operation, such as the "62" Process for making wide-mouth ware, fire-polishing equipment, and double-gob equipment.

[fol. 712]

TYPICAL WARE MADE ON THE I.S. MACHINE



With the I.S. Process the same machine is used for either large or small ware, for narrow-neck or wide-mouth ware, and even for small pressed ware. Adjustments for different ware sizes and types can be made quickly, with a minimum of down time. Only a change in mold and delivery equipment is required. Because it is

adaptable to such a wide range of ware, the I.S. Machine permits scheduling for more efficient operation of melting furnaces and other interrelated equipment. Full use of this versatility enables a plant to broaden the scope of its sales and enter vigorously into competition for many different types of ware.

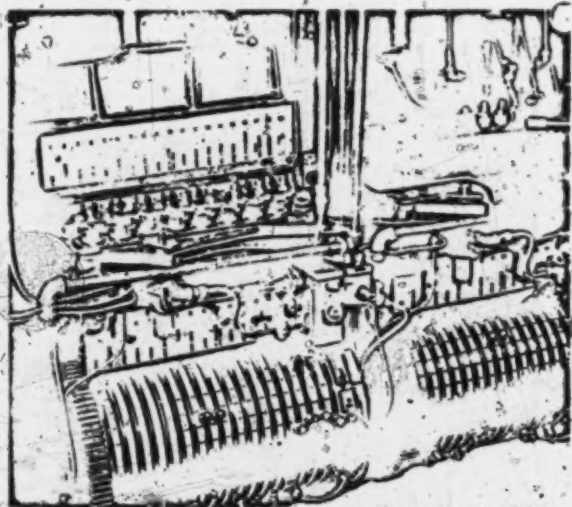
WIDE RANGE OF WARE

HARTFORD - EMPIRE I.S. MACHINES

The I.S. Process is based on the use of identical Individual Sections. Each section consists of one blank mold and one blow mold. The sections are assembled to form machines of increasing production capacities.

Five-section and six-section machines are most common. For high rates of production, eight-, ten- and twelve-section machines are used. Single-section machines are available for hand feeding. Two-section machines also may be obtained and later increased in size.

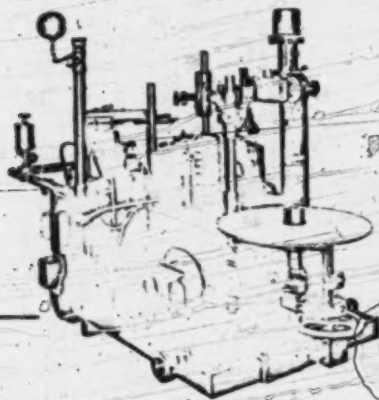
This variety of combinations and ready flexibility makes the I.S. Process highly efficient for any type of ware and any size of order. Any section may be adjusted while other sections continue to operate. The I.S. Machine is pneumatically operated. The timing drums and conveyor are driven from the feeder mechanism.



CLOSE-UP SHOWING I.S. TIMING DRUMS.

INTERNAL COOLING

By means of the Internal-Cooling Blowhead, which is standard equipment, it is possible to obtain up to 10 per cent increase in the rate of production. Internal cooling is accomplished by circulating air through the formed article while it is still in the blow mold. It is applicable to bottle finishes greater than 7/8 inch (11 mm.) inside diameter.



HAND-FED SINGLE-SECTION I.S. MACHINE

For production of small orders in a wide variety of shapes and sizes—or for use with special glasses—the single-section machine is economical. One hand-gatherer can feed the machine. Shearing, transfer, and take-out are automatic.

WEIGHTS AND CUBAGE OF
AVERAGE I.S. MACHINE
AND CONVEYOR WHEN
CRATED FOR EXPORT

6-SECTION I.S.

NET	34,700 Lb.	15,740 Kg.
GROSS	44,300 Lb.	20,094 Kg.
CUBAGE	1.675 cu. ft.	47.77 Cu. ft.

ADVANTAGES OF THE I.S. MACHINE

1. FLEXIBILITY

The I.S. Machine is highly efficient for any size of order, large or small, and for the manufacture of large or small ware, narrow-neck, wide-mouth, and even some small pressed ware. Mixed orders of different shapes may be produced on any number of sections of one I.S. Machine, provided all sections require the same weight and shape of gob and the same forming speed.

2. HIGHEST QUALITY

Independent control of every glass-forming action in each individual mold—a distinctive feature of the I.S. Machine— aids materially in assuring highest quality of either common or difficult ware. Distribution is controllable to an exceptional degree, a dominating factor where "light weighting" is desirable:

3. INCREASED PRODUCTION

Because the I.S. Machine produces more ware per mold per minute than any other forming machine, fewer molds are required for filling any given order in a given time. Through continuing research and improvement, the rate of productivity is constantly being increased.

Standardization of mold design and of dimensions of parts assures getting jobs into production quickly.

Note: For best quality and maximum efficiency, it is essential to use a Hartford-Empire Feeder.

4. ACCESSIBILITY OF SECTIONS

Most adjustments are made without stopping the machine. Independent control of each section permits individual mold changing, adjustment, and repair.

5. SAFETY

The straight-line, stationary I.S. Machine, assures the safest conditions possible for operating personnel.

6. STAMINA

Precision standards of manufacture and rugged construction of the Hartford-Empire I.S. Machine guarantee long life. One example is the heavy linkage used and the ruggedness of the mold-handling parts. As a result, some machines are still in use after 30 years of service.

7. CONTINUAL IMPROVEMENT

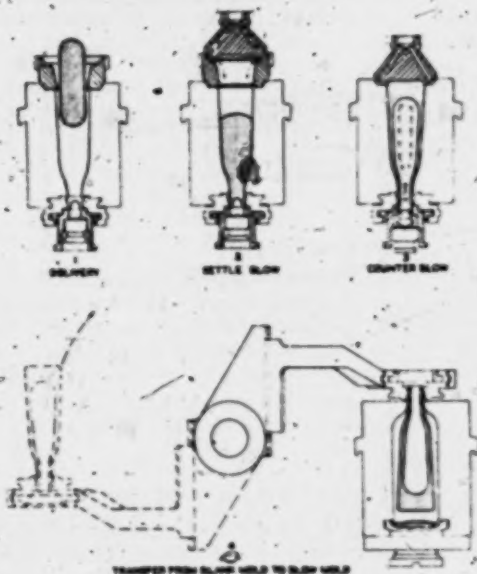
It is the policy of the Hartford-Empire Company to improve continually the design of its machinery. The principle of the I.S. Machine permits modernization in accordance with new advances in design.

8. NON-JAMMING ACTION

It is virtually impossible to jam the Hartford-Empire I.S. Machine, because of its pneumatic operation. Any obstruction in the machine merely stalls action without causing serious damage.

3-SECTION I.S.			4-SECTION I.S.			5-SECTION I.S.			SHOULDER-SECTION I.S.		
NET	31,400 lbs.	14,323 Kg.	NET	34,100 lbs.	15,472 Kg.	NET	14,500 lbs.	7,484 Kg.	NET	6,000 lbs.	2,722 Kg.
GROSS	34,100 lbs.	17,282 Kg.	GROSS	37,200 lbs.	16,913 Kg.	GROSS	22,000 lbs.	9,979 Kg.	GROSS	8,000 lbs.	3,629 Kg.
CUBAGE	1,240 cu. ft.	35.11 Cu. M.	CUBAGE	940 cu. ft.	26.62 Cu. M.	CUBAGE	720 cu. ft.	20.39 Cu. M.	CUBAGE	275 cu. ft.	7.79 Cu. M.

FUNCTIONAL OPERATION of the HARTFORD-EMPIRE I.S. MACHINE



BLOW-AND-BLOW SINGLE-GOB PROCESS

THE MOLD CHARGE is fed to the blank (parison) mold of each section by the delivery system. The parison is formed upside down and is then transferred to the blow mold by means of the neck-ring mechanism, which immediately returns to the blank mold. Finished ware is blown in the blow mold while the next parison is formed. To aid in high-speed production, a unique take-out and conveying system is provided. To satisfy all plant layout requirements, the conveyor may project either to the right or to the left, and may deliver either directly to a stacker, which is recommended, or to a secondary conveyor. A feeder motor drives the I.S. control drum, from which all functions are pneumatically operated. Correct timing between the feeder and I.S. Machine is accomplished by means of an infinitely adjustable differential drive.

HARTFORD-EMPIRE "62" PROCESS

Readily applied to the I.S. Machine, the Hartford-Empire "62" Process, which is a press-and-blow operation, improves conventional forming processes of light-weight, wide-mouth ware by forming the complete parison immediately upon glass delivery in the blank mold. This process produces improved-quality ware, ideally controlled glass distribution, and very substantial speed increases over I.S. blow-and-blow methods. The mechanism includes a long-stroke pressing-plunger unit.

Blank molds and plungers are designed to formulas based on experience with the process. Certain pressed articles can also be made with the "62" mechanism.

[Vol. 716]

TYPICAL WARE



WARE SPECIFICATION LIMITS

BLOW-AND-BLOW SINGLE-GOB PROCESS

Max. Height Under Neck 13.73" (349.35 mm.)
 Max. Body Diameter 7.00" (177.8 mm.)
 Max. Neck Size .99 mm.

Please refer to diagram on opposite page for blank-forming cycle.

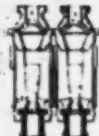
BLOW-AND-BLOW DOUBLE-GOB PROCESS

Max. Height Under Neck 10.825" (275.07 mm.)
 Max. Body Diameter 5" (127 mm.)
 Max. Neck Diameter .50 mm.

BLANK-FORMING CYCLE



DELIVERY



SETTLE BLOW



COMPLETION BLOW

PRESS-AND-BLOW SINGLE-GOB PROCESS

Max. Height Under Neck 11.00" (279.4 mm.)
 Max. Body Diameter 7.00" (177.8 mm.)
 Max. Neck Size 1.39 mm.

BLANK-FORMING CYCLE



DELIVERY



PRESS

PRESS-AND-BLOW DOUBLE-GOB PROCESS

Max. Height Under Neck 8.40" (213 mm.)
 Max. Body Diameter 3.00" (76.2 mm.)
 Max. Neck Size .48 mm.

BLANK-FORMING CYCLE



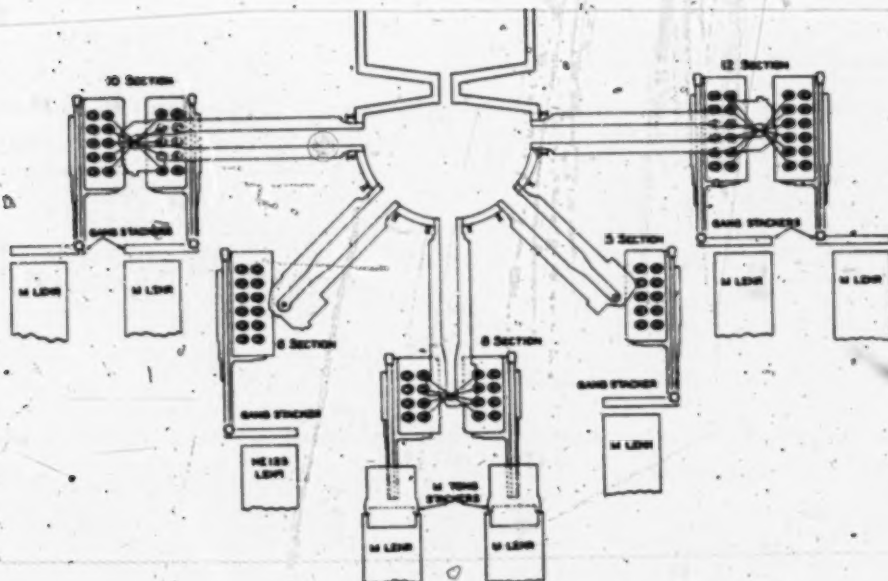
DELIVERY



PRESS

VARIOUS I.S. MACHINE COMBINATIONS

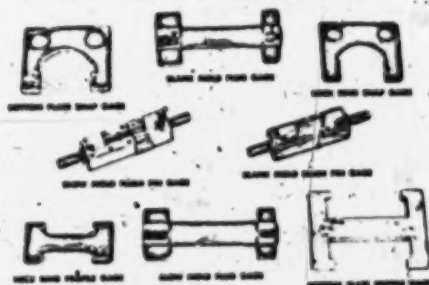
COMPOSITE DIAGRAM



The Individual-Section Glass-Forming Process particularly lends itself to future advancement of practices and efficiency in the glass factory. Hartford-Empire's engineers are always available to help work out individual applications for all Hartford-Empire glassmaking equipment. In the above diagram, the various combinations possible with the I.S. Process are shown. Here, at a glance, is revealed the unequalled ability of the I.S. Process to meet varying production requirements with minimum investment.

MOLDS FOR THE I.S. MACHINE

I.S. MACHINE MOLD EQUIPMENT GAGES



Mold-design specifications, incorporated in data books, are available to all users of the I.S. Machine and all makers of I.S. molds. These specifications, based on the best experience in the container industry, have been accumulated to meet the steadily advancing techniques in this process.

Mold-equipment gages and mold test fixtures are available at additional cost. The gages assure correct interlocking fits and interchangeability of the mold parts themselves. The test fixtures serve as a final check of mold interlocking and machine registration so as to prevent possible operating difficulties.

MOLD ENGINEERING

The H-E Mold Engineering Service Group designs and prepares complete manufacturing drawings of mold equipment at a moderate cost for all Hartford-Empire forming machines. Improvements in forming practices, glass composition, and machine or auxiliary equipment are a few of the many factors taken into consideration in preparing mold drawings. Standard or special designs can be completed within a few days after receipt of specifications. If a customer desires, the mold equipment itself can be furnished through Hartford-Empire, in which case it will be inspected prior to shipment.

Standard replacement parts are available for periodic repairs. These precision-built parts are manufactured from production drawings and are interchangeable on any machine in the field. A list of recommended replacement parts is supplied by Hartford-Empire. A moderate inventory of these components is recommended. Their immediate availability is assurance against any prolonged break in the continuity of operation when overhaul is required.

**PRECISION
SPARE
PARTS**

AUXILIARY EQUIPMENT

To meet the specialized production requirements of glassware manufacturers, the Hartford-Empire Company has developed a number of auxiliary devices to be applied to the I.S. Machine. Available at moderate cost, these devices extend the scope of the I.S. Machine far beyond its original design. Future improvements in design may result in even greater potential. Hartford-Empire engineers are available at all times for consultation on the practical application of such auxiliary equipment.

DOUBLE-GOB EQUIPMENT

With double-gob equipment, two bottles are formed simultaneously in a double-cavity mold or in individual dual molds. Double-gob production is recommended for large orders which are to run a full week or more. The equipment consists of double-gob mechanisms, delivery equipment, and mold and take-out equipment. Parts such as shears, for adapting the feeder to double-gob operation, must also be applied.

DOUBLE-GOB "62" EQUIPMENT

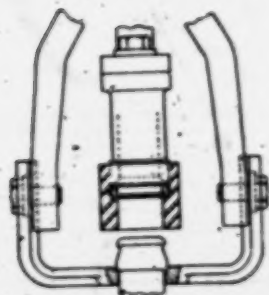
For quantity production of light-weight wide-mouth ware, the Hartford "62" Process is combined with standard double-gob equipment. The mechanism includes a double pressing plunger unit with individually controlled plunger pressure. It is recommended when one job will run for two weeks or longer, or when several jobs will exceed one month in combined time.

ADVANTAGES OF DOUBLE-GOB PROCESS

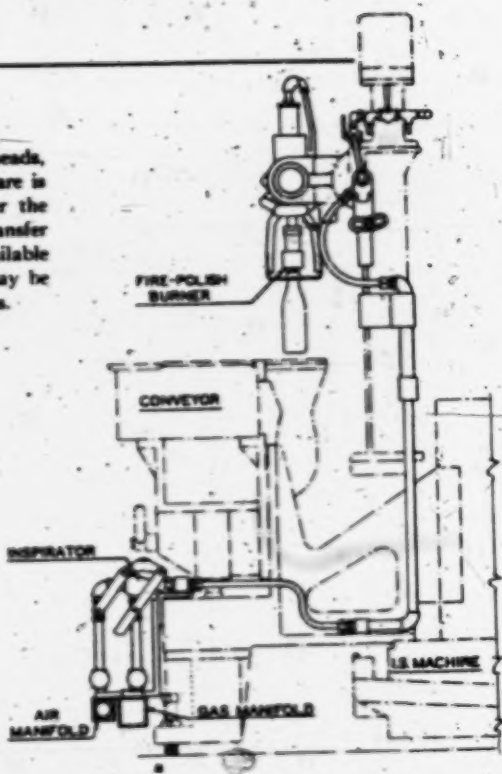
1. About 60 to 70 per cent greater productivity is possible from a given amount of floor space and forming-machine equipment.
2. Feeder and labor cost per bottle is lower.
3. Double-gob operating efficiency is practically the same as single-gob for a single bottle, when the double-gob equipment is operating within its range.
4. Mold-equipment cost per bottle is lower.
5. The initial investment for a four-, five-, or six-section I.S. Machine, equipped for double-gob, is lower than an eight-, ten-, or twelve-section I.S. Machine operating single gob.

FIRE-POLISHING EQUIPMENT

This auxiliary device features take-out burner heads, which fire-polish the tops of ware while the ware is being removed from the blow mold and after the ware has been placed on the dead plate for transfer to the conveyor. Fire-polishing equipment, available for both single- and double-gob operations, may be used with natural, manufactured, or bottled gas.



ENLARGED VIEW OF FIRE-POLISH BURNER



DEAD-PLATE CONVEYORS

Single Dead-Plate Conveyor

The single dead-plate conveyor incorporates one cooling plate on which the ware is placed after removal from the mold, before it is transferred to the conveyor belt.

Double Dead-Plate Conveyor

The double dead-plate conveyor provides two dead plates for each machine section and a separate wind control for each dead plate. Approximately 20% additional cooling air is available.

Each container is placed upon the first dead plate by the take-out mechanism, and is then transferred to the second plate by a cam-actuated pusher having a straight-line motion. The container is then transferred to the conveyor belt by a similar pusher, which is operated by a second cam.

The double dead-plate conveyor can be arranged for single-gob or double-gob operation, or may be operated as a single dead-plate conveyor for single-gob or double-gob operation.

All units can be arranged for either right- or left-hand delivery as specified.



DOUBLE DEAD-PLATE

COMPRESSED-AIR REQUIREMENTS FOR I.S. MACHINES

4-SECTION I.S.	BLOW AND BLOW		"AS" PROCESS	
	Single Sub	Double Sub	Single Sub	Double Sub
OPERATING AIR	415 C.F.M. (11.74 Cu.M./Min.)	415 C.F.M. (11.74 Cu.M./Min.)	510 C.F.M. (14.43 Cu.M./Min.)	480 C.F.M. (13.74 Cu.M./Min.)
INTERNAL COOLING	130 C.F.M. (3.60 Cu.M./Min.)	Not Available	130 C.F.M. (3.60 Cu.M./Min.)	Not Available
SETTLE BLOW	40 C.F.M. (1.70 Cu.M./Min.)	40 C.F.M. (1.70 Cu.M./Min.)	Not Req'd	Not Req'd
PLUNGER COOLING	Not Req'd	Not Req'd	310 C.F.M. (8.94 Cu.M./Min.)	300 C.F.M. (8.49 Cu.M./Min.)
TOTALS	585 C.F.M. (16.84 Cu.M./Min.)	475 C.F.M. (13.30 Cu.M./Min.)	840 C.F.M. (23.80 Cu.M./Min.)	780 C.F.M. (21.30 Cu.M./Min.)

Note: If internal cooling is used, the operating-air requirements may be decreased by approximately 25 C.F.M. (0.71 cubic meters per minute).

(a) For other I.S. Machines, the air requirements are proportional to the number of sections.

(b) All air requirements are maximum free air at 70°F (21°C) and 14.7 Ps. per sq. in. (1.0335 Kg. per sq. cm.)

(c) Operating air regulated to 30 Ps. per sq. in. \pm 1 Ps. (2.109 Kg. per sq. cm. \pm .0676 Kg.)

(d) AS" other air is at factory pressure, usually about 40-50 Ps. per sq. in. (2.81-3.52 Kg. per sq. cm.)

(e) The compressed air used with the I.S. Machine should be clean and dry as obtained through the use of a well-designed aftercooler.

COOLING AIR

Mold-cooling air may be introduced to the I.S. Machine from overhead, as shown on Page 2, or from basement supply ducts. Approximately 2240 cubic feet of cooling air are required per section at 15 inches (0.0380 Kg. per sq. cm.) water pressure. This is sufficient for all weights and types of ware within the capacity of the machine, for glass of average container quality, and with average operating technique.

Where double dead-plate conveyors are used, the cooling air requirements are increased by approximately 20 per cent. In the following tabulation are given the air requirements for the various types of I.S. Machines.

NUMBER OF I.S. SECTIONS	Cubic Feet per min. @ 15" water (28 mm. mercury) pressure and Cubic Meters per min. @ 0.0380 Kg. per sq. cm.			
	TYPE 117 DOUBLE DEAD-PLATE CONVEYOR		TYPE 117 DOUBLE DEAD-PLATE CONVEYOR	
	Cubic Feet	Cubic Meters	Cubic Feet	Cubic Meters
1	2,240	62.43	2,688	76.12
2	4,480	126.86	5,376	152.23
4	8,960	253.72	10,752	304.46
5	11,200	317.15	13,440	380.58
6	13,500	382.28	16,000	453.07
8	17,920	507.44	21,304	606.93
10	22,400	634.30	26,880	761.16
12	27,000	764.56	32,000	906.14

I.S. MACHINE PRODUCTION RATES

In this table are shown recent production rates of I.S. Machines served by Hartford-Empire Foundry. Unless otherwise indicated, these figures are based on the best average performance obtained at a given weight.

Acceptable speeds are affected by:

1. Weight-Capacity Ratio
2. Shape of Canister
3. Glass Composition
4. Operating Practice

Packed were per 24 hours is the true measure of machine performance.

The standard test for hand gathering for the Single-Section I.S. Machine is 10 to 12 per minute.

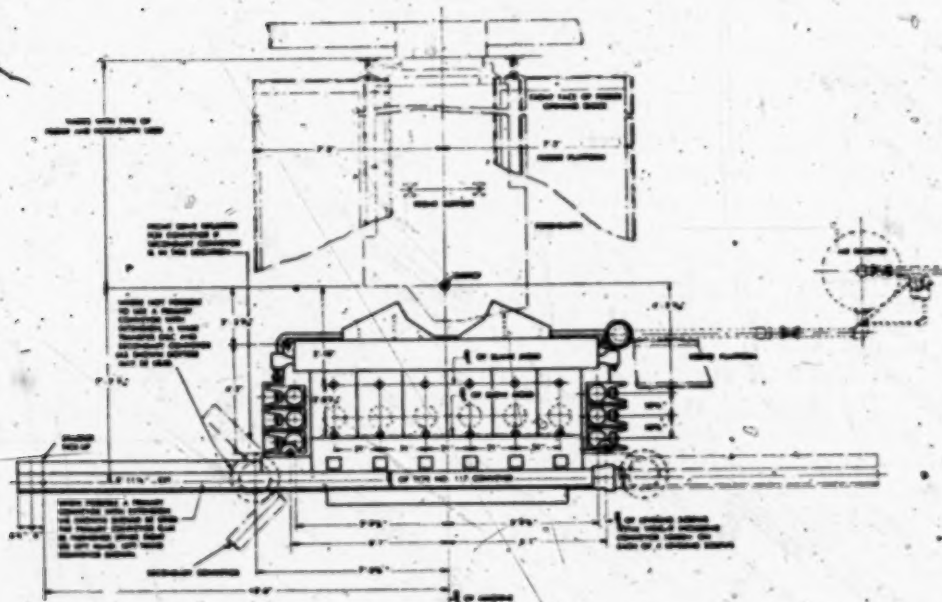
	GRAMS WEIGHT	OUNCES WEIGHT	MOLD CHARGES PER MINUTE	GROSS PACKED PER 24 HRS.	PIECES PACKED PER 24 HRS.
5-SECTION MACHINE NN Blow and Blow	Less than 38	Less than 1	76.5	712	102,530
	38	1	73.1	679	97,776
	142	5	54.2	505	72,730
	283	10	46.1	442	63,648
	425	15	36.7	334	48,096
	567	20	31.0	330	47,520
	709	25	30.0	275	39,600
	830	30	25.2	225	32,400
6-SECTION MACHINE NN Blow and Blow	1134	40	20.6	185	26,640
	1417	50	16.6	121	18,864
	Less than 38	Less than 1	91.6	854	122,976
	38	1	87.7	815	117,360
	142	5	65.0	606	87,264
	283	10	55.3	530	76,320
	425	15	44.0	401	57,744
	567	20	42.0	396	57,024
3-SECTION MACHINE DOUBLE GOB NN Blow and Blow	709	25	36.0	330	47,520
	830	30	30.2	270	38,880
	1134	40	24.7	222	31,968
	NS 1417	50	19.9	157	22,608
	Less than 38	Less than 1	130.5	1197	172,560
	38	1	125.9	1154	166,176
	142	5	98.0	807	116,508
	283	10	70.4	670	96,480
6-SECTION MACHINE DOUBLE GOB NN Blow and Blow	425	15	56.9	542	78,048
	Less than 38	Less than 1	186.6	1436	206,784
	38	1	151.1	1385	199,440
	142	5	117.6	968	139,592
	283	10	84.5	804	115,776
	425	15	68.5	650	93,600
	38	1	75.1	725	103,968
	142	5	62.2	585	81,648
5-SECTION MACHINE "63" PROCESS WM Press and Blow	283	10	49.7	457	65,808
	425	15	40.5	354	51,264
	567	20	33.7	296	42,624
	709	25	28.4	254	36,584
	830	30	27.5	234	33,996
	1134	40	21.7	178	25,632
	38	1	90.1	866	124,704
	142	5	74.6	680	97,920
6-SECTION MACHINE "63" PROCESS WM Press and Blow	283	10	59.6	548	78,912
	425	15	48.6	437	61,698
	567	20	40.4	355	51,120
	709	25	34.1	307	44,208
	830	30	33.0	281	40,464
	1134	40	26.0	214	30,816
	83	3	135.8	1234	177,696
	142	5	109.7	999	143,856
5-SECTION MACHINE "63" PROCESS Double Gob—WM Press and Blow	198	7	88.0	771	111,024
	83	3	163.0	1481	213,264
	142	5	131.4	1199	172,656
	198	7	105.4	925	133,200

The above tabulation is based on actual experience with 5-Section I.S. Machines.

In general, productivity is proportional to the number of sections. Thus, similar figures for other I.S. Machines can be estimated from the above data.

[fol. 723]

6-SECTION I.S. MACHINE



PLÁN

[fol. 725]

GOVERNMENT'S EXHIBIT 235a

1/18/54

SFD
REG
MAH

Narrow Mouth Prices

Bob Graham has some charts which show prices of cans vs. glass on specific items past ten years. Charts indicate that the differential has widened (instead of narrowing) and I would like to see the figures (also plotted) on baby food, 303 jars, 300 jars, soluble coffee, or any W/M figures you have. This could also be interesting on a N/N major item such as syrups, etc.—if you have 'em.

These figures will be important in making our decision on prices. The 1.9% price increase announced on cans covered cost increases for 1953. The Can Companies have recently taken on a \$.15 per hour labor increase, and they will undoubtedly be confronted with making a decision soon on increases they expect to make to be effective April 1, 1954. Even if they should decide to add another 3 or 4%, this might be the time that we want to stay a bit under them to restore the differential—or at least level it out.

How soon can we get these figures and charts on a couple of items, preferably baby food and soluble coffee—and a N/N item?

CGB

[fol. 726]

GOVERNMENT'S EXHIBIT 235b

3/15/54

Glass Container Price Increases

JPL
SFD
SLR
MAH

Baby food and soluble coffee prices will be increased 2% on 4/1/54. This matches the 1.9% can price increase 1/1/54. MAH covered coast.

CGB

JBW

I advised SLR on this

EB

August 13, 1954

Sales Policy Meeting

July 29 and 30, 1954

Catawba Cliffs Beach Club

Present:

G. S. Babcock, H. A. Barnby, M. G. Beishline, C. G. Bensinger, E. F. Bertrand, F. T. Cantrill—Richmond, J. W. Colbert—New York, F. N. Davis—Dallas, S. F. Davis, R. E. Delaplane, R. L. Feters—Nashville, M. A. Hellrung, C. G. Houghton—St. Louis, E. M. Jones—Cincinnati, E. C. Jones—Chicago, Frank Jones, Jr.—Atlanta, H. C. Knepper—Cincinnati, R. M. Koehrman, N. J. Laird, C. R. Megowen, S. L. Rairdon, W. M. Robertson, C. I. Rodgers—New York, J. A. Rudy, J. A. Runnels—Atlanta, E. F. Schafer, O. D. Snavely, F. J. Solon, K. J. Solon, K. S. Upham, R. C. White—San Francisco.

Opening Remarks

Mr. S. F. Davis welcomed the group and commented on some of the problems present in today's business. He also stated that many of the problems of the newer salesmen should be handled at the branch or regional level, rather than be referred to Toledo.

Container Division Program

Mr. C. G. Bensinger commented briefly on profits by line and profits by branch pointing out that the latter figure is definitely beneficial to branch operation. He also stated that this year production is geared to manufacture 40,000,000 gross, and that by a level operation throughout the year, thus keeping trained personnel, this figure could be increased to 42,000,000 gross. Idling and curtailing operations means laying off valuable people and incurring high rehiring costs. He stated that we should reduce costs to meet future wage increases, thus not having to increase prices. Mr. Bensinger commented that if each salesman would make one more call per day, the increased sales would result in cost reductions. He felt that the bottle salesmen should know more about closures, and thus be in a position to sell the complete package.

JW

Earnings, Objectives, & Competitive Situation

Through the first six months of this year, Mr. M. A. Hellrung stated that we are substantially below earlier indications of a good profit performance. From the latest estimate, it appears that 1954 will not equal '53 performance before tax although elimination of the excess profit tax will improve the after-tax picture. He also pointed out that while we picked up seven-tenths percentage points in industry position for the first half, it was on a less favorable mix of ware. We sold 1.6% less tons than a year ago and 2.8% [fol. 728] less tons than the first six-months forecast, due on a large part to December price-buying of Beverage and Dairy ware. Manufacturing volume for the first six months of '54 was up 1.5%. This enabled us to maintain a more stable employment pattern. However, the resulting inventory increases meant heavy expenditures in outside warehouses. The expense of outside warehousing will be reduced upon completion of new plant warehouses in 1955. He stated the only way to achieve any kind of a satisfactory profit picture this year must come about through an emergency cost reduction program. At this point Mr. Hellrung presented charts and discussed in detail the subjects of profit objectives and performance against these objectives, gross sold vs. forecast, sales and earnings, industry position by lines, sales vs. quotas, and budget efficiency. Mr. Hellrung also commented the current competitive situation.

Production & Manufacturing Program

After discussing our 1954 production, Mr. M. G. Beishline stated that next year capacity will be 44,000,000 gross; in 1956, it will be 46,500,000; and in 1957, 47,500,000. This increase of 5,500,000 million over our present 42,000,000 production capacity would be accomplished by machine conversions, continued increased double gobbing, the new Bridgeton "H" furnace, conversion of Bridgeton's "A" furnace to Flow, and continued production increases. Mr. Beishline stated that this year we began with a 3,500,000 gross inventory and that next year we will begin with about a 4,000,000 gross inventory. In order to accommodate this year's inventory, we are spending \$3,000,000 for warehousing in 44 buildings off our plant premises. After taxes, this

is a penalty against earnings of \$1,500,000. Management has approved three new warehouses during the past seven months totaling 750,000 square feet, at an average cost of about \$1,000,000 each. These warehouses will not increase our storage capacity but will reduce the costliness of outside storage. Mr. Beishline also stated that the G-50 Machine is back in operation at Huntington after being idle for nine weeks. The ARF Machine on Alton's "M" furnace is now scheduled for operation in September. He also commented on such things as unit load shipments, colorant forehearths, and glued manufacturers' joints.

Closure & Plastics Program

In discussing this topic, Mr. G. S. Babcock reviewed the new organizational setup in the Closure and Plastics Division. He stated that Glassboro will laminate and wax line materials for San Jose and St. Charles plants. He also stressed the importance of selling plastic jars to replace opal glass. Mr. Babcock also emphasized the importance of bottle salesmen selling closures, thus providing one source of responsibility for a complete packaging service.

[fol. 729] Surface Treatment, Inventories, & Carton Development

Mr. K. J. Solon discussed the expanding interest in surface treatment. He further pointed out that we have started to run tests on various items employing four different coatings—the GE silicone, Dow Corning silicone, polyethylene wax, and 15-101. When these tests have been completed, evaluation of the effectiveness of the different kinds of coatings will be presented. In discussing our inventories and warehousing programs, Mr. Solon pointed out that with the permanent increase in the size of inventories, the risk of aging also increases. Therefore, we must be sure that the expensive warehousing facilities are used economically. Recent carton developments featuring the tear-strip principle for opening cartons has been adopted by about 45 accounts. More recently, work has been done on inner-flap printing which controls the adhesion to the unprinted surfaces.

Personnel Requirements

Mr. E. F. Schafer discussed the interviewing methods used by the Company, and further pointed out the changes that have occurred in the type of men available. He mentioned specifically what he terms "job hopping"—they quit jobs fast, often without notice for better opportunities or more money. He also discussed the difficulties that arise when both the husband and wife are employed, as well as the Military Service aspect. Mr. Schafer also discussed the method of hiring used by the Maytag Company. That company sends a questionnaire to twelve references, asking them to rate the man on eight or ten factors.

S. L. Rairdon

Mr. Rairdon spoke on the topic "Selling to Sellers," pointing out many of the facets of the business job of selling advertising. The use of newspapers, radio, and television as a selling tool were discussed. Mr. Rairdon stated that it is interesting to note that there is currently little emphasis on the importance of economy as a purchasing factor of the consumer; instead, the trend is toward convenience, attractive appearance, contributions to health, and connotations of prosperity. There have been dramatic changes, not only in packaging and distribution, but in customer buying habits as well. Convenience was from the beginning the driving force which moved merchandise from bulk to packages, and today the drive towards convenient packaging is greater than ever. Mr. Rairdon reminded those present that we have the resources for technical research, product design and manufacture, plus the all important know-how in advertising, merchandising, and selling techniques—all geared to an ever-changing pattern.

Western Region

In commenting on this region, Mr. E. F. Bertrand stated that the outlook in Peoria, Detroit, and St. Paul was good. Milwaukee is showing some improvement, while the Toledo area remains critical. Chicago business is strong but not too optimistic for the second half. The competitive situation is still strong in the region. Mr. Bertrand stated that the PIA program has brought substantial business into the area dur-

ing 1954, quality and service have improved, and the dollar billings should be up for the last half of this year.

[fol. 730]

Southwestern Region

Mr. F. N. Davis stated that the market outlook was generally good in the face of strong competitive activity. He pointed out that the M&M situation is not satisfactory. Due to the increase in freight rates, many food and vegetable packers are moving into the region. Mr. Davis discussed the need for alterations on the split-sales credit plan.

Eastern Region

Mr. C. L. Rodgers stated that in the last half of this year we should do as well or better than we did in the same period of last year. In the case of New York Branch despite very poor shipments to the liquor industry, they are 7.7% ahead of six months of last year. For the first six months of this year, Philadelphia is 2.1% ahead of the same period of 1953; and with the heavy food shipments that they normally expect in the fall, it is the hope that they can exceed the last six months of 1953. Baltimore and Boston should finish the year in relatively good shape. Although due to high percentage of beverage and milk bottle business, they may have more difficulty than some of the other branches. Mr. Rodgers commented that he continues to get complaints from the branches on the matter of service out of the plants and the length of time always required to get answers from our people. He also stated that most of the Eastern branches are going to be helped materially by the increased operations at Bridgeton.

Midwestern Region

Mr. C. G. Houghton stated that the sales for this region are expected to exceed last year. Through the first six months of '54, they are substantially ahead of the same period of the prior year. He did state that the Indiana tomato pack is one of the smallest they have had in years in that area. Mr. Houghton also brought up the question of changes in the salesmen contest prizes, suggesting better prizes for both the Salesmen of the year Contest as well as the President's Club.

Southern Region

Mr. J. A. Runnels remarked that with the exception of the Memphis trade area where cotton plays such an important part, the market outlook is very good. In the Kentucky area, there has been a reduction of better than 25,000 people at the atomic energy plant in Paducah. It is felt, however, that the outlook in other sections of the Southern Region will more than offset these reductions, and he is confident that the Southern Region will finish the year with sales greater than the prior year. In speaking on quality, he stated that while our quality continues to be good, competitors' quality has shown a marked improvement, reducing to a very large extent the difference in quality which has been a major sales tool.

Central Region

Mr. E. M. Jones stated that they are doing their best to offset the transfer of the Schenley business to New York and in that connection reported some interesting new business developments involving decorated tumblers for Scull at Dayton, changing the Mentholatum Company, Buffalo, from traditional Opal to Emerald Green, as well as some Kroger business. Mr. Jones also commented on the Index Window Cleaner bottle recently designed by Dwight Forst for the Drackett Company, which enabled them to hold down their costs. That move was not only appreciated by the customer, but also was very instrumental in our holding the business. In closing, he commented that service and quality is good.

[fol. 731]

Pacific Coast Outlook

Mr. K. C. White stated that the Coast problems and situations were parallel to those of the East, mentioning specifically the canned beverage situation. He stated that their catsup, baby food, and food and vegetable business looks good. Wine is currently off, but improving.

Chicago Branch

Mr. E. C. Jones presented a divided sales credit policy. His proposal was that while each account must be judged on its own merits, the percentage that goes to each depends on how much control that branch has over the purchasing

done by the account involved. In order to qualify for split credit, annual billings into any shipping destination must reach \$25,000. After fulfilling these requirements, the individual account would fall into a particular category which carried definite percentage splits within limits of 25% to 75%.

Richmond Branch

Mr. F. T. Cantrill commented briefly on some of the local branch situations. He also stated that he was of the opinion that great value was derived from holding regional sales meetings in our factories. These trips through the plants disclose new developments and are very helpful to the salesmen.

Nashville Branch

A Merchandising Canned Beverage Campaign was recently conducted in the Memphis area, and Mr. R. L. Fetters stated that many complaints were tabulated. Some retail outlets were still holding some of this stock. Complaints were rusted shoulders, off-flavor, etc.

Atlanta Branch

Frank Jones stated that through six months of this year, Atlanta is running approximately 6% ahead of the same period last year. He further added that they are in a growing market area and should be greatly benefited by the Atlanta plant.

Cincinnati Branch

Mr. H. C. Knepper pointed out that quite often customer personnel changes as well as ours, and often times this is an opportunity for our salesmen to build a position with a customer that he was unable to do so with before. He also felt that major account contacts by top Toledo personnel were extremely beneficial.

Packaging Research

Discussing the Packaging Research program, Mr. H. A. Barnby covered some of the problems of the beverage can. He also pointed out that competition is learning customers' needs and working them into selling needs, such as customer, plant layouts, experimental packs, etc. He also dis-

cussed the fact that new plastic containers allow for forming and filling at one point of operation.

Mr. C. R. Megowen

Mr. Megowen reviewed the operations of all of our divisions, specifically discussing sales and earnings, as well as the perspectives of the business. He also commented on the potential that lies ahead of American industry. Since ours is a service organization, Mr. Megowen enumerated many new facilities which will aid us in giving our customers [fol. 732] better service. In view of the increase in freight rates, he pointed out the importance of weight reduction in containers.

December Branch Managers' Meeting

Mr. E. F. Schafer stated that tentative dates were December 6th and 7th. Considerable discussion followed regarding the merits of holding one large meeting as contrasted to the regional groups meeting with the various industries.

Beverage Industry Plans

Mr. R. E. Delaplane stated that for the first six months of this year, Beverage Division sales were off 14.5%; Coca-Cola, off 32.4%; and Liquor, 1.2%; Brewery was ahead 17.2% for a net decrease in the Beverage Industry of 4.5%. Increased billings on Brewery ware were due to two factors: (1) PIA stocks; (2) heavier purchases of returnable bottles by several large breweries. The fact that the Beverage Industry position at the end of six months is only 2/10 of 1% below last year's figure for the same period indicates that we are not alone in our difficulties. Mr. Delaplane stated that press releases indicate that the liquor business has been off quite generally during the first six months of this year. Mr. Delaplane reported that our sales to Beverage and Coca-Cola accounts are down because of heavy purchases in the fourth quarter of last year, poor weather, the trend toward paper cup dispensers, and heavy inventory by competitors. In discussing the sales outlook for carbonated beverages including Cokes, the outlook is mixed. Bottlers this year are faced with can competition; and since it is felt that can sales are being made at the expense of bottled goods, the orthodox users may not attain

last year's sales levels. This can competition plus our huge shipments in the fourth quarter of '53 combined to force the feeling that our 1954 business cannot possibly match or exceed last year. Mr. Delaplane also stated that the annual Beverage and Brewery Sales Meeting will be held in Toledo on September 23rd and 24th.

Drug Industry Plans

Mr. W. M. Robertson reviewed sales figures for each of the divisions. Mr. Robertson pointed out that they have stressed additional volume with their top accounts; and in the case of the top fifteen T&C accounts, they have enjoyed an increase totaling approximately \$500,000 with twelve of the first fifteen. He stated that in the Prescription Division, the Flint Rx. Square has created new interest and it has set a new pattern in the prescription ware field. He also mentioned that they are studying and analyzing a change in packaging the Rx. ware line. Mr. Robertson stated that one of the most interesting developments within the P&P Division was the introduction of the Shelf-Pack line. There are nineteen sizes available. He also remarked about the change from Opal to Emerald Green glass with Musterole and [fol. 733] Mentholatum. In the H&C Division, Mr. Robertson explained in detail the redesigning of the Windex bottle for the Drackett Company. Lighter weight work is also being done for Boyle-Midway. In closing, Mr. Robertson explained the new organizational setup of the Drug and Chemical Division.

Food Industry Plans

Mr. K. S. Upham stated that for the first six months of this year, the Food Industry sales were approximately \$6,000,000 ahead of the same period last year. This points toward an 80 to 85 million dollar year for the Food Industry. Mr. Upham displayed containers they are working on presently which have a re-use, as home freezer jars. In addition they also make a very satisfactory refrigerator storage jar and are completely satisfactory for home canning. This type jar is particularly suitable for such products as salad dressing and mayonnaise, mustard, peanut butter, cake frostings, etc. Mr. Upham pointed out that work must be done with

Dairy jobber salesmen so as to improve our position in the fluid milk business.

Closure & Plastics Plans

Mr. J. A. Rudy pointed out that sales for the first six months are up approximately 11% compared to a year ago. This is due largely to increased sales of Vapak caps. Mr. Rudy displayed samples of metalized molded closures and commented on the increased billing value that can thus be obtained. He stated that the plastics business is a fast growing industry and solicited the salesmen to contact Toledo with their problems. Mr. Rudy also commented on the possibility of plastic containers as substitute for Opal ware. In this regard, he pointed out that plastic containers lend themselves to the cosmetic trade since they can be made very decorative. In closing, Mr. Rudy stated that there are developments on both closures and plastics which are going to present sales opportunities.

Closing Remarks

In summary, Mr. Davis commented on the growth of the Glass Container Division in the last year and half and stressed the amount of money spent for research and the important part that it plays as a sales tool. He emphasized the importance of the lighter weighting program and stated that salesmen should be trained to consult regional or branch managers with their problem before referring them to Toledo. Mr. Davis also stressed that branch action must be taken to relieve our present inventory and cancellation situations.

R. M. Koehrman

RMK:bb

[fol. 734] GOVERNMENT'S EXHIBIT 235d
 Sales Policy Committee Meeting

Tuesday—Wednesday, February 23 and 24, 1954

Duraglas Center Theater

Members Present: H. A. Barnby, E. F. Bertrand—Chicago, S. F. Davis—Chairman, R. E. Delaplane, M. A. Hellrung, C. G. Houghton—St. Louis, E. M. Jones—Cincinnati, W. M. Robertson, C. L. Rodgers—New York, J. A. Rudy, J. A. Runnels—Atlanta, K. J. Solon.

Members Absent: C. G. Bensinger, F. N. Davis—Dallas, E. F. Schafer, F. J. Solon, K. S. Upham, K. C. White—San Francisco.

Also Present: W. P. Adams—Philadelphia, G. S. Babcock, M. G. Beishline, H. J. Carr, J. W. Colbert—New York, R. A. Cosh, J. Duncan, Jr., R. E. Graham, H. C. Gstalter—Detroit, K. A. Hamel, George Harsh—New Orleans, Bert Herron, E. C. Jones—Chicago, R. M. Koehrman, J. P. Levis, J. M. McGarry, W. D. Plummer, S. L. Rairdon, J. W. Thayer—New York.

Opening Remarks

After welcoming the group, Mr. S. F. Davis announced that the purpose of the meeting was to discuss the present price and cost situation and its relationship to corporate earnings. Mr. Davis also pointed out that the younger salesmen refer too many of their problems to Toledo when actually they can be answered by the Branch or Regional Manager.

Earnings and Prices

Mr. M. A. Hellrung presented and reviewed charts on sales and profits, profit by line, branch expense, and cost increases. He pointed out that in 1953, the per cent profit after tax dropped and that in view of cost increases in raw materials, labor, fuel, and power, increased revenue was necessary. Mr. Hellrung also presented a new price increase card which will be furnished to the Sales Department. This card, based on percent of increase over the 1935-1939 average, compares the O-I selling price with such indices as consumer prices, freight rates, soda ash, wholesale commodity prices, and O-I wage rates.

Manufacturing Program

The manufacturing program was reviewed by Mr. R. A. Cosh. He discussed such things as our use of colorant feeders, electric boosters, increased mold costs, a more sensitive gauging head, and warehouse facilities. He particularly pointed out increases in power costs and the necessity for auxiliary fuel installations to offset gas curtailments present in the winter months.

Production Program

In discussing the production program, Mr. M. G. Beishline pointed out that due to the P.I.A. program, additional rented warehouse space has increased our costs in that respect. This has prompted plans for additional warehouse space on our own properties. At this point, Mr. Davis called attention to the fact that due to the relatively limited shipping facilities, it is impossible to move great amounts of ware from outside warehouses during a short period of time, [fol. 735] such as we might encounter prior to a price increase. Mr. Beishline stated that in 1953, approximately 36 per cent of our production was from Flow operations. Of this, almost half was double gob. He estimated that in 1954, Flow production would be approximately 40 per cent of the total and by 1960, about 50 per cent of our production would be Flow.

Closure & Plastics Division Expansion Plan

Mr. G. S. Babcock called attention to the Closure and Plastics Meeting in Philadelphia, March 1 and 2, as a means of building product knowledge on the line. He mentioned improved liners and new equipment at Glassboro for making our own liners, new assembly units, and new injection machines. Clorox's decision to use an aluminum cap rather than a molded closure has opened up considerable Lauterbach time.

Trade Relations

Mr. J. Duncan, Jr. discussed Trade Relations.

Institutional Advertising Plans

Mr. S. L. Rairdon pointed out the definite need for an institutional advertising plan to further the new corporate identity program. In this regard, Bert Herron presented

six display formats covering Color-Break ampules, dry milk powder, Libbey tumblers, instant coffee, glass block, and plastic items used in conjunction with glass containers.

Packaging Research

Mr. H. A. Barnby commented on improvements in the speed of filling line operations and the synchronization of the capper and filler into one unit. He mentioned the future possibility of Freon 114—pressure less than twenty-five pounds—as a possibility for glass spray packages. Present supplies of this gas, however, are limited; and therefore, its adoption is not practical at this time. Mr. Barnby also pointed out that the customer should not consider the cost of the glass based simply upon delivery to his dock, but what it may represent in greater efficiency in the packing operation.

Beverage Industry Plans

Mr. R. E. Delaplane commented on the Beverage Industry plans for 1954. He presented a table indicating a 1954 sales forecast of \$82,800,000, or 7.1 per cent over 1953 actual. This represented a grossage increase of 1,139,000 gross. Regarding Liquor and Wine, Mr. Delaplane stated that they will aim specifically at an increased position with Schenley, Seagrams, and Hiram Walker justified by giving them the utmost in the way of service, quality, and the closest possible attention at all times. The Liquor Division will also continue to develop new and eye-catching decanters for the holiday trade, since they are good profit items. They will maintain contacts with major wineries, pushing for their adoption of Champagne Green, which of course takes them out of the competitive market.

In commenting on the Brewery Division, Mr. Delaplane pointed out that the 1953 volume was off about one million dollars from the prior year due to our inability to serve them during the summer months. This was brought about in part, due to the transition from GB-8 to GB-7, which prevented making considerable inventory. The Brewery Division is entering the year of 1954 with a better position inventory-wise and are hopeful that they can regain some of the position lost in 1953. Mr. Delaplane stated that during this year, they plan on having more contacts with the

major beverage parent companies such as Coca-Cola, Pepsi Cola, Canada Dry, etc. They have been participating actively in more important state bottlers' meetings and will continue to do so. The most active sort of solicitation seems indicated if they are to keep abreast of the activities on cans [fol. 736] versus bottles for beverage. At this point, Mr. Delaplane presented considerable detail on advantages and disadvantages of beverage in cans as well as discussing bottlers operating can lines.

Drug Industry Plans

Mr. W. M. Robertson commented on the Drug and Chemical Industry plans for 1954. In the case of Prescription Division, he mentioned a study is going to be made of the packaging on each Rx. Line. White molded caps with the new plastic coated liner have been added to the Emerald Green Rx. Squares, Emerald Green and Dropper Service. The new Rx. Flint Square Line with white molded closures has already been announced. Mr. Robertson commented on the Prescription Ware selling tools, such as, the 3-D movie, the slide film on inventory control, the giant oval, miniature show groups, and other presentations.

Mr. Robertson stated that in 1953, Toiletry and Cosmetic Division sales were approximately \$100,000 greater than in 1952. They definitely expected another substantial increase in 1954 by concentration on major companies. The Toiletry and Cosmetic Division does not have any plans to bring out a new stock line. After analyzing the type of business that they would like to have in the Toiletry and Cosmetic field, it was found that from 80 to 85 per cent of that volume would be on private molds; therefore, they feel that they have ample stock of toiletry and cosmetic items.


In commenting on the Pharmaceutical and Proprietary Division, Mr. Robertson described and demonstrated the new Self Pack Line consisting of twenty sizes and the new pourout finish. He explained that there is a definite trend from Amber to Flint in the Pharmaceutical Industry, this being brought about by colored tablets and capsules. He also commented that with the acceptance of a polio serum, a great potential is found in that field.

The Household and Chemical Division expects their '54 sales to run at least 10 per cent ahead of 1953. They cur-

rently are market-testing detergents packed in tin versus glass. Mr. Robertson stated that the greatest H & C potential for new glass business lies in the chemical field. Heavy bulk chemical houses are developing new products, and the majority of these items are of such a nature that they need glass as their package. All in all, the Drug and Chemical Industry is looking forward to a good 1954.

Food Industry Plans

Mr. R. E. Graham commented for the Food Industry. He stated that Owens-Illinois shipments of Duraglas containers to food customers increased $14\frac{1}{2}$ per cent in 1953 over the prior year. While the shipment to the total Food Industry increased 3,300,000 gross, Owens-Illinois shipments to the Food Industry increased 1,650,000 gross, or exactly half of the total industry increase. Mr. Graham predicted a 10 per cent increase for the Food Industry during the year of '54. This increase will result in sales of over \$80,000,000.



Paper continues to make serious inroads in the Dairy Division. It is hoped that additional volume in dry milk solids as well as gallon and half-gallon business will allow the Dairy Division to maintain the same total volume in 1954. The Tumbler and Coffee Divisions predict a 20 per cent increase—'54 over '53. This is expected even in light of tremendous increases in 1953 in the sales of containers for preserves, jellies, processed cheese, and soluble coffee. The Prepared Foods Division expects to maintain the 1953 [opl. 737] grossage in the current year. Certain losses of volume will be offset by increases in pickle, mustard and sauce glass. In the Processed Foods Division, Mr. Graham expects an increase of about \$3,000,000. This is expected to come from catsup, baby foods, table syrups, and eatable oils.

Closure & Plastics Plans

In discussing the Closure and Plastics plans for 1954, Mr. J. A. Rudy stated that we have the advantages of Owens-Illinois plusses in the manufacture and service of closure and plastic items. Mr. Rudy stated that they expect a substantial further increase in caps for baby food due to Vapak. He commented on torque control units to eliminate breakage and assure good sealing as well as experiments on thread contour, giving improved torque control. Mr. Rudy stressed

the importance of using plastics in conjunction with glass for such items as pourouts, sifters, applicators, etc.

Western Region

Mr. E. F. Bertrand commented that the market outlook in 1954 for the Western Region was favorable. With the exception of some isolated problems, quality in the Western Region is generally good. Mr. Bertrand felt that our present M&M stocks are not adequate, and in many cases, we fail to meet customers' needs for that particular reason. There are even instances where we lose volume on items we can deliver simply because we are not able to supply certain other M&M items customer needs. At this point, other sales representatives agreed with Mr. Bertrand. Mr. Beishline stated that they would study the M&M situation. A survey will also be conducted whereby branches will report to Toledo on a biweekly basis any M&M outages they encounter, as well as the volume lost because of the shortages.

Eastern Region

Mr. C. L. Rodgers stated that some of the Eastern Branches are not measuring up to 1953 sales, but feels that by the end of the first quarter, they will equal '53. New York and Albany are running ahead of the prior year, and Philadelphia, the second largest Eastern Branch, is only slightly behind the same period last year. The Eastern Branch group is relatively optimistic about the current year. Mr. J. W. Colbert also commented that M&M outages are a definite problem.

Midwestern Region

Mr. C. G. Houghton commented on the Midwestern Region. He indicated that the general outlook in the Omaha territory appears to be good with every indication that sales through 1954 should show an increase over 1953. Sales in Kansas City Branch will show approximately a seven per cent gain through the first 60 days of this year. The Indianapolis market outlook is generally good, although it may vary in activity by lines. The Louisville Branch predicts that their business volume in '54 should closely approximate last year. There is some indication that spirit blended whiskey will continue to lose position to the straights. If

this becomes a fact, we can look for a slight shrinkage in Seagram volume, but this could be picked up through Brown-Forman, Stitzel-Weller, Glenmore, etc. Mr. Houghton stated that the St. Louis Branch predicts shipments for the first six months of 1954 to be approximately 20 per cent ahead of last year, this increase largely brought about by Falstaff and Pet Milk. Mr. Houghton also commented on a broker situation in the Midwestern Brewery business.

Southern Region

In commenting on the Southern Region outlook, Mr. J. A. Runnels stated that the Food Industry Division outlook appears to be very bright; Drug and Chemical should hold its own, possibly even show an increase. In the Beverage Industry, demand for One-Way Beers seems to be holding at a good level, however, Beverage orders are soft at the present. None of the Southern Branches have reported any [fol. 738] major complaints as to quality. Service is improving and they have not turned down any business. With the exception of Beverage ware, the inventory along the trade seems to be on the low side, particularly so with food packers. Mr. Runnels stated that our building of P.I.A. inventories will be of great relief; nevertheless, he wanted to comment on the importance of building larger M&M stocks.

Central Region

Mr. E. M. Jones advised that the Central Region's sales for January are 22.7 in the black. With increases from such accounts as Heinz, Schenley, and M & R Dietetic, the Central Region should continue to run considerably ahead of 1953. Mr. Jones mentioned that competition is very active and has encountered increasing instances of competition granting special trucking and handling allowances, free palletization, etc.

Sales Operating Problems

Mr. K. J. Solon commented on abuses of our 1 per cent cash discount. These abuses are: taking unearned discounts, discounts on the gross amount (including freight), competitive practices, and special term's requests. In an effort to rectify this situation, effective March 1, all invoices will show the exact amount of the discount allowable. The Credit

Department will advise Branch and Sales Managers of improper discount practices. Branches will then take up the matter with the customer. Mr. Solon also discussed the control of cancellations and setbacks.

New York Branch

Mr. J. W. Thayer commented that New York's sales in the month of January were over a half million dollars in excess of 1953. He felt that a price increase may result in some loss of volume to the Glass Container Industry in certain glass-tin competitive lines.

Chicago Branch

Mr. E. C. Jones brought up the question of reshipper cases. He stated that our price lists specify 175-pound Mullen test will be supplied where the weight of the package and filled bottles does not exceed 40 pounds. Where weight exceeds 40 pounds but does not exceed 60 pounds, 200-pound test will be used. Mr. Jones pointed out that in many cases we are furnishing 200-pound test when it is not necessary under Rule 41, and furthermore, not in accordance with our policy. He felt that use of the 175-pound test where ever possible would result in an increase in revenue. This has even gone to the point where one of Chicago's larger accounts has asked us to quote lower prices based on supplying 175-pound test outers.

Detroit Branch

Mr. H. C. Gstalder stated that unemployment in the state of Michigan has caused a softening in Beverage, Beer, and Dairy activities. He advised that acceptance sampling has greatly improved our quality on shipments to Gerbers. Mr. Gstalder felt that Paragraph 10 of our contract form should be reviewed since two of his large-volume accounts refused to sign due to provisions of that paragraph. Mr. Davis said the entire contract is being studied along these lines by Babbs and Solon.

New Orleans Branch

Mr. George Harsh advised that competition is stepped up in the New Orleans Branch and mentioned some price and terms concessions granted by competition.

Mr. J. P. Levis

Mr. J. P. Levis reviewed the earnings and financial statistics of the Corporation for the last three years. He pointed out that in view of decreased earnings and increased expenditures, additional revenue was needed.

R. M. Koehrman

RMK/lh

[fol. 739]

GOVERNMENT'S EXHIBIT 304



**Articles of Incorporation and Code of Regulations
Glass Container Manufacturers Institute, Inc.
June 5, 1945**

**Section 10, amended as of December 5, 1945
Section 60, amended as of March 25, 1949
Section 10, amended as of March 23, 1950**

[fol. 740] **Articles of Incorporation of
Glass Container Manufacturers Institute, Inc.**

Witnesseth that we, the undersigned, all of whom are citizens of the United States, desiring to become a corporation not for profit under the General Corporation Act of Ohio, do hereby certify:

Article First

The name of this corporation is Glass Container Manufacturers Institute, Inc.

Article Second

The place in this state where the principal office of this corporation is to be located is the City of Toledo, Lucas County, Ohio.

Article Third

The purpose for which this corporation is formed is to be and conduct a business league not organized for profit, and as a part thereof, in the interests of the glass and allied industries, packers, bottlers, governmental agencies and the general public: to promote the progress of the glass and related arts and sciences; to improve and expand the manufacture and use of glass containers and closures; to foster and facilitate packing and bottling in glass; to improve and increase the efficiency of machinery, equipment and appliances for the manufacture, handling and use of glass containers and closures and techniques in connection therewith; to improve materials and supplies and the use thereof in the manufacture and distribution of glass containers and closures; to expand domestic and foreign [fol. 741] markets; to originate, gather and disseminate technical, statistical and general data and information on tariff, traffic, credit, labor and other matters of interest to those engaged in the glass container industry and related industries; to develop standards for glass containers, closures, quality controls, testing and accounting procedures; to promote the interests of the glass, closure, and allied industries in every lawful manner through research, experimental work, education of the public and glass users, market research and promotion, the reduction of costs, and services to glass container and closure manufacturers,

packers, bottlers and other users; and generally to do all things reasonably incidental to said purpose, necessary, convenient or expedient for the best interests of the glass, closure and allied industries and the general public, to the same extent as an individual might or could do, either within or without the State of Ohio, and in any capacity; but this corporation shall never engage in any activity prohibited by valid law or regulation of either Federal or State authority.

Article Fourth

The names and post office addresses of the Trustees of this corporation, not less than three, who are to serve until the first annual meeting or other meeting called to elect Trustees, are:

Name	Address
Lewis F. Gayner.....	Salem, New Jersey
George F. Lang.....	102 St. Albans Way, Baltimore, Maryland.
Francis H. May.....	524 Spencer Avenue, Marion, Indiana.
John H. Rau.....	North Central Avenue, Indianapolis, Indiana.
Robert L. Warren.....	Brockway, Pennsylvania
Roy R. Underwood.....	Knox, Pennsylvania.
Fred E. Fuller.....	807 Ohio Building, Toledo, Ohio.

[fol. 742]

Article Fifth

The names and post office addresses of the members of this corporation upon organization are:

Anchor Hocking Glass Corporation	Lancaster, Ohio.
Brockway Glass Company .	Brockway, Pennsylvania.
Buck Glass Company	Fort Avenue & Lawrence Street, Baltimore 30, Maryland.
Carr-Lowrey Glass Company	Baltimore 3, Maryland.
Chattanooga Glass Company	Chattanooga 10, Tennessee.

Name	Address
Diamond Glass Company ...	First Avenue, Royersford, Pennsylvania.
Dominion Glass Company, Ltd.	1111 Beaver Hall Hill, Montreal, P. Q. Canada.
Fairmount Glass Works, Inc.	1501 So. Keystone Avenue, Indianapolis 7, Indiana.
Florida Glass Manufactur- ing Company	P. O. Box 2118, Jacksonville 3, Florida.
Foster-Forbes Glass Company	P. O. Box 711, Marion, Indiana
Gayner Glass Works	Salem, New Jersey.
Knox Glass Associates, Inc.	Knox, Pennsylvania.
Lamb Glass Company	Mt. Vernon, Ohio.
Latchford-Marble Glass Company	P. O. Box 4707, Florence Branch, Los Angeles 1, California.
Laurens Glass Company ...	Laurens, South Carolina.
Liberty Glass Company ...	Sapulpa, Oklahoma.
[fol. 743]	
Maryland Glass Corporation	2147-53 Wicomico Street, Baltimore 30, Maryland.
Maywood Glass Company ..	5615 S. Riverside Dr. Sta. K, Los Angeles 22, California
Northwestern Glass Company	5801 East Marginal Way, Seattle 4, Washington.
Obeur-Nester Glass Company	East St. Louis, Illinois.
Pierce Glass Company	Port Allegany, Pennsylvania.
Swindell Brothers, Inc.	Bayard and Russell Streets, Baltimore 30, Maryland.
Tygart Valley Glass Company	Washington, Pennsylvania.
Universal Glass Products Co.	Parkersburg, West Virginia.
T. C. Wheaton Company ..	Millville, New Jersey.

Article Sixth

The qualifications for membership in this corporation are as follows:

1: Any corporation, partnership, association or individual engaged in the manufacture or sale of glass containers or closures therefor other than jobbers, or machinery, appliances, equipment, supplies or materials used in connection therewith, which may lawfully do so, may become a member of this corporation upon making written application to do so, except that:

(a) The persons named in Article Fourth, and all persons who may hereafter be elected Trustees of this corporation shall be Trustee members of this Corporation during their terms of office as Trustees, without further action on their part; and

[fol. 744] (b) The corporations named in Article Fifth shall be regular members of this corporation without further action on their part until thirty days after the adoption of a code of regulations by the members, at which time any such corporation which has failed to make said written application shall cease to be a member.

2. The written application for regular membership in this corporation shall, when accepted by this corporation, constitute an agreement on the part of the applicant to be bound by the corporation's code of regulations during the term of membership and such application shall otherwise be in such form as the code of regulations may prescribe.

3. Except as provided in paragraph 1(b), all regular memberships in this corporation shall terminate on December 31, 1947, and thereafter at the end of each third calendar year after 1947, but any such membership may be renewed by similar written application in such form as shall at the time be prescribed by the code of regulations, made not less than ninety days prior to the expiration of such membership; and all Trustee memberships shall expire with the expiration of the terms of office of the respective Trustees.

4. Each regular membership shall continue for the period from the date of acceptance of the application there-

for until December 31, 1947, or from the date of acceptance of the application until the expiration of the current three year period in or with respect to which application for membership is made, but the corporation may in its code of regulations provide for suspension and expulsion from membership.

5. No regular member shall have or be entitled, directly or indirectly, to more than one vote on any matter considered by the members, and accordingly no Trustee member shall, as such Trustee member, be entitled to vote or be [fol. 745] counted in determining the number of members necessary to constitute a quorum, or a quorum at any meeting of members.

Article Seventh

No part of the net earnings of this corporation shall ever inure to the benefit of any private shareholder, member, or individual. No part of the assets of this corporation shall ever be distributed to any member by reason of such membership, either during the period of its operation, or upon its liquidation.

Article Eighth

No compensation for services shall ever be paid to any Trustee, as such, or as a member of this corporation's Executive Committee, nor shall any allowance for expenses be made to any Trustee, as such, or as a member of this corporation's Executive Committee.

Article Ninth

All rights of a member in this corporation and its property, shall cease upon the termination of membership.

Article Tenth

These Articles of Incorporation may be amended from time to time as now or hereafter provided by law.

In Witness Whereof, the undersigned have hereunto set their hands on March 1st, 1945, March 5th, 1945 and March 13, 1945.

Lewis F. Gayner, George F. Lang, Francis H. May,
John H. Rau, R. R. Underwood, Robert L. Warren,
Fred E. Fuller.

[fol. 746] State of New York,
County of New York, ss.:

Personally appeared before me, the undersigned, a Notary Public in and for said county, Lewis F. Gayner, George F. Lang, Francis H. May, Robert L. Warren and Fred E. Fuller, who each subscribed and acknowledged the signing of the foregoing Articles of Incorporation to be his free and voluntary act and deed for the uses and purposes therein mentioned.

Witness my hand and official seal on the day and year aforesaid.

Ida B. Gilson, Notary Public.

Ida B. Gilson, Notary Public, New York County, Court's No. 516, Register's No. 702-G-6, Commission Expires March 30, 1946.

(Seal.)

[fol. 747]

No. 20282

STATE OF NEW YORK,
County of New York, ss.:

I, ARCHIBALD R. WATSON, County Clerk and Clerk of the Supreme Court, New York County, the same being a Court of Record having by law a seal, DO HEREBY CERTIFY, That Ida B. Gilson whose name is subscribed to the annexed deposition, certificate of acknowledgment or proof, was at the time of taking the same a NOTARY PUBLIC in and for said County, duly commissioned and sworn and qualified to act as such and authorized by the laws of the State of New York to protest notes, to take and certify depositions, to administer oaths and affirmations and certify the acknowledgment or proof of deeds and other written instruments for lands, tenements and hereditaments, to be read in evidence or recorded in this State, And further, that I am well acquainted with the handwriting of such Notary Public, or have compared the signature of such officer with his autograph signature filed in my office, and believe that the signature to the said annexed instrument is genuine.

In Witness Whereof, I have hereunto set my hand and affixed my official seal this 1 day of March, 1945.

Fee paid 25¢

ARCHIBALD R. WATSON, County Clerk and Clerk of the Supreme Court, New York County.

(Seal.)

[fol. 748] STATE OF PENNSYLVANIA,
County of Venango, ss.:

Personally appeared before me, the undersigned, a Notary Public in and for said County, Roy R. Underwood, who subscribed and acknowledged the signing of the foregoing Articles of Incorporation to be his free and voluntary act and deed for the uses and purposes therein mentioned.

Witness my hand and official seal on the 5th day of March, 1945.

Fred W. Richardson, Notary Public. My Commission Expires April 30, 1947.

(Seal.)

STATE OF PENNSYLVANIA,
County of Venango, ss.:

I, Richard I. Fry, Clerk of the Orphan's Court in and for said county, the same being a Court of Record, having a seal, do certify that Fred W. Richardson whose name is subscribed to the annexed affidavit, certificate or proof of acknowledgement, was at the time of taking said affidavit or proof of acknowledgment a Notary Public in and for said county, dwelling therein, and duly authorized and empowered by law to take the same, and to take the acknowledgment of deeds to be recorded in said State; that I am acquainted with the handwriting of the said

, and verily believe that the signature to the said affidavit, a certificate or proof of acknowledgment is genuine. I further certify that said affidavit, certificate or proof of acknowledgment is executed according to the laws of this commonwealth.

In Witness Whereof, I have hereunto set my hand and affixed the seal of said Court, at Franklin, this Fifth day of March 5, A. D. 1945.

Richard I. Fry, Clerk of Orphans' Court.

(Seal.)

[fol. 749] STATE OF INDIANA,
County of Marion, ss.:

Personally appeared before me, the undersigned, a Notary Public in and for said county, John H. Rau, who subscribed and acknowledged the signing of the foregoing Articles of Incorporation to be his free and voluntary act and deed for the uses and purposes therein mentioned.

Witness my hand and official seal on the 13th day of March, 1945.

Robert A. Williams, Notary Public. Com. Expires
Jan. 23, 1949.

(Seal.)

STATE OF INDIANA, MARION COUNTY, SCT:

I, the undersigned, Clerk of the County of Marion, in the State of Indiana, and also Clerk of the Circuit Court within and for said County and State, the same being a Court of Record, and having a seal, do hereby certify that Robert A. Williams, whose name is subscribed in the annexed instrument, was at the time of executing such acknowledgment—oath to wit: March 13, 1945, an acting Notary Public within and for the County aforesaid, duly commissioned and qualified, and authorized by the laws of the State of Indiana, to take and certify the same, as well as to take and certify all affidavits, and the acknowledgment and proof of deeds or conveyances, and all other instruments of writing.

And further, that I am well acquainted with the handwriting of said Robert A. Williams and verily believe that the signature to said Certificate or Proof of Acknowledgment or Jurat is genuine, and that said instrument is executed and acknowledged according to the laws of the State of Indiana.

In Testimony Whereof, I have hereunto set my hand and affixed the seal of said Court and County at Indianapolis, Indiana, this 13 day of March, A. D. 1945.

A. Jack Tilson, Clerk.

(Seal.)

[fol. 750] Code of Regulations of
Glass Container Manufacturers Institute, Inc.

Name

1. The name of this corporation is Glass Container Manufacturers Institute, Inc.

Offices and Books of Record

2. The principal office of the corporation in Ohio shall be in the City of Toledo, and the agent of this corporation in Ohio upon whom process, tax notices or demands against the corporation may be served is Fred E. Fuller, Toledo, Ohio.

3. The corporation may have another or other office or offices; within or without the State of Ohio, at such place or places as the Trustees may designate from time to time.

4. The books of record of the corporation, except as otherwise required by law, may be kept at such office of the corporation as the Trustees may designate from time to time.

5. The books, accounts and records of the corporation shall be open to inspection by the members at such times and subject to such regulations as the Trustees may, from time to time, determine, but in no event shall the confidential records or reports of any member or any non-member be open to the inspection of or be disclosed to any other member, or any other corporation, association, partnership or individual.

Application for Regular Membership

6. Applications for regular membership shall be in the following form, to-wit:

[fol. 751] Glass Container Manufacturers
Institute, Inc.

Application for Membership

The undersigned hereby makes application for membership in the Glass Container Manufacturers Institute, Inc.

In consideration of the acceptance of this application for membership, the applications of others for membership, the benefits and advantages to be obtained from the Institute, and the agreements and undertakings entered into by and on behalf of the Institute, the undersigned agrees—

That pursuant to Article VI of the Articles of Incorporation of the Institute the term of the membership of the undersigned herein shall be from to

To abide by the Code of Regulations as the same now is, and with all lawful amendments thereto hereafter made;

To pay, during the continuance of the above period all assessments duly and properly levied against the undersigned by the Trustee of the Institute, pursuant to Sections 10, 11 and 12 of the Code of Regulations, provided, however, that the undersigned reserves the right to resign from the Institute in the event the assessments so levied shall exceed the rate of one-tenth of one per cent of aggregate net sales per annum and provided notice of such resignation is given the Institute within thirty (30) days from the date such assessments are levied.

Dated at — this — day of —, 19—

By — —.

Accepted, Glass Container Manufacturers Institute, Inc.

By — —.

[fol. 752] Membership Book and Certificate

7. The corporation shall keep a membership book containing the name and address of each regular and Trustee member, and the date of admission to membership. Upon the termination, or renewal, of any membership, such fact shall be recorded in the membership book, together with

the date on which the membership ceased or was renewed.

8. Regular membership may be evidenced by non-transferable membership certificates in such form as the Trustees may determine from time to time.

Suspension and Expulsion of Members

9. Any member may be suspended or expelled from the corporation by the Trustees for failure to pay any assessment or for any wilful breach of the code of regulations. Before any member is suspended or expelled such member shall be notified, in writing, by mail, at such member's last known address, of the charges and of the time and place of the meeting of the Trustees at which such charges shall be considered, at least ten (10) days before such meeting. Such member shall have the right to appear in person and by counsel at said meeting. Such charges may be sustained and such member suspended or expelled by the affirmative vote of not less than two-thirds of the full number of the Trustees. A member shall not be a member in good standing from the date of mailing such notice until the dismissal of such charges, or such member's expulsion, or the termination of such member's suspension, as the case may be.

Assessments

10. In order to provide for the support and maintenance of the corporation each regular member shall, subject to the provisions of Section 12 hereof, on or before the last days of January, April, July and October in each year, pay [fol. 753] to the corporation amounts which shall not exceed the following amounts, to-wit:

(a) Each January payment, one-eighth† of one per cent of its aggregate net sales of glass containers and closures for the second preceding calendar year, if a manufacturer of glass containers or closures; and one-eighth† of one per cent of its aggregate net sales to manufacturers of glass containers or closures and users of glass containers for the second preceding calendar year, if not a manufacturer of glass containers or closures; and

(b) Each April, July and October payment, one-eighth† of one per cent of its aggregate net sales of

† As amended March 23, 1950.

glass containers and closures for the next preceding calendar year, if a manufacturer of glass containers or closures; and one-eighth of one per cent of its aggregate net sales to manufacturers of glass containers or closures and users of glass containers for the next preceding calendar year, if not a manufacturer of glass containers or closures;

but no regular member shall pay less than \$200.00 per year, and within said maximum and minimum limits the Trustees shall determine the percentage assessment based upon aggregate net sales as aforesaid to be paid in each year on or before December first of the preceding year, and the Treasurer shall notify each member in writing thereof on or before December thirty-first of said preceding year. *There shall be no discrimination among regular members or classes of regular members in the rate or percentage of the yearly payments, except that special arrangements may be made with companies not incorporated in the United States.

11. Aggregate net sales as used in this code or regulations shall be determined as follows:

[fol. 754] Glass Container Net Sales

The aggregate dollar amount of empty, new, machine-made bottles, jars and tumblers (including packages and any fitments sold in connection therewith) for the commercial packing or domestic packing of any product, less amounts paid by the glass container manufacturer for freight, returns and allowances. No deduction shall be made for cash or jobber discounts, brokerage, sales or commission expenses.

Where one glass container manufacturer produces for and/or sells to another glass container manufacturer, he shall exclude such sales from his aggregate net sales; and the manufacturer making the transaction with the ultimate customer, bottler or packer shall include the amount of such sales in his aggregate net sales.

† As amended March 23, 1950.

* As amended December 5, 1945.

Closure Net Sales

The aggregate dollar amount of metal and molded closures, whether continuous thread, lug or lug style, single or double shell, one-piece or two-piece types, friction or machine applied (including band caps) for the commercial packing or domestic packing of any product, less amounts paid by the manufacturer for freight, returns and allowances. No deduction shall be made for cash or jobber discounts, brokerage, sales or commission expenses.

Where one closure manufacturer produces for and/or sells to another closure manufacturer, he shall exclude such sales from his aggregate net sales; and the manufacturer making the transaction with the ultimate customer, bottler or packer shall include the amount of such sales in his aggregate net sales.

Machinery, Equipment, Appliances, Raw Material Supplies and Affiliated Industries Net Sales

The aggregate dollar amount of sales made to glass container and closure manufacturers, less amounts paid [fol. 755] for freight, returns and allowances. No deduction shall be made for cash or jobber discounts, brokerage, sales or commission expenses.

12. Special assessments may be made from time to time, on the same basis, and in such percentages as may be determined by the Trustees, and approved by a majority of the regular members then in good standing.

13. The Trustees may accept voluntary contributions from corporations and others not members of the Institute, and/or make arrangements for fees to be paid the Institute for information and services by regular members and by corporations and others not members of the Institute to the extent that it is lawful to do so; and the Trustees shall take any such contributions and/or arrangements into account in fixing or adjusting the current percentage assessments provided for in Section 10 of this code of regulations in order that the corporation's receipts as an entirety shall substantially equal its disbursements in carrying on its activities.

Members Meetings

14. Each meeting of members shall be held at such place within or without the State of Ohio as the Trustees may determine.

15. The annual meeting of members shall be held on the second Thursday in May of each year at 10:00 A. M., or if such day be a holiday, then on the next Thursday at the same hour.

16. Special meetings of members may be called by the President or by resolution adopted by the Trustees, and shall be called upon written demand of five Trustees or ten regular members in good standing, and shall be held at the time and place fixed by the President or the Trustees therefor.

17. Notice of each meeting of members shall be given each member in writing, setting forth the time, place and [fol. 756] purpose or purposes thereof, by post-paid mail or by pre-paid telegram, addressed to such member at the address of such member shown on the records of the corporation, mailed or telegraphed at least ten days before the date for fixed for such meeting.

18. Any member may waive any notice of any meeting of members, in writing, either before or after the meeting.

19. A majority of the regular members in good standing of the corporation, present in person or by proxy, shall be necessary to constitute a quorum, but a lesser number may adjourn from time to time, without further notice, until a quorum is secured.

20. A complete list of members entitled to vote at any meeting of members shall be prepared in alphabetical order by the Secretary, and shall be open to the examination of each member during the whole time of election at any meeting of members at which an election is held.

21. Any regular member in good standing may vote at any meeting of members either in person, or by proxy duly authorized in writing and signed by such member, or by telegram or wireless message appearing to have been transmitted by such member.

22. Each regular member in good standing shall be entitled to one vote on each matter considered at any meeting of members, but there shall be no cumulative voting at any election.

23. A corporation, partnership or association member shall be present in person at any meeting of members when any officer of such corporation or association, or partner of such partnership is present. The President, Vice-President, Secretary and Treasurer in the order named, of any corporation or association which is a member of the institute, present at any meeting of members, shall constitute the presence of such corporation or association at such meeting, and his vote at such meeting shall constitute the [fol. 757] vote of such corporation or association which is a member of the Institute, unless such member has authorized some other person to represent it by proxy filed with the secretary of the meeting prior to the vote taken at said meeting.

24. Unless changed by a majority vote of the quorum present, the order of proceedings at each meeting of members shall be:

- (1) Reading of minutes of preceding meeting.
- (2) Reading of reports and statements.
- (3) Unfinished matters.
- (4) Election of Trustees.
- (5) New matters.

Trustees

25. The corporate powers, property and affairs of the corporation, subject to the limitations contained in the Ohio General Code, the Articles of Incorporation and the Code of Regulations, shall be exercised, conducted and controlled by a board of eleven trustees, each of whom shall upon election as Trustee and during the term of his office as Trustee, become and be a Trustee member of the corporation; one of whom shall be a citizen of the State of Ohio; and not less than eight of whom shall be officers or employees of manufacturers of glass containers who are regular members of this corporation.

26. The terms of office of the Trustees named in the articles of incorporation shall expire at the first meeting of the corporation called to elect Trustees.

27. At the first meeting of the corporation called to elect Trustees, three Trustees shall be elected for a term expiring at the 1946 annual meeting of the corporation, four Trustees shall be elected for a term expiring at the

1947 annual meeting of the corporation, and four Trustees shall be elected for a term expiring at the 1948 annual meeting of the corporation, and until their respective successors shall be elected and qualified as Trustees.

[fol. 758] Thereafter at each annual meeting, Trustees shall be elected for a term of three years, and until their successors shall be elected and qualified, to fill the vacancies caused by the expiration of the terms of the Trustees whose terms then expire. In case of vacancy caused by any reason other than expiration of his term of office, such vacancy shall be filled by the Trustees by election for the unexpired term, and until a successor is elected and qualified.

Trustees Meetings

28. Each meeting of the Trustees shall be held at such place within or without the State of Ohio as the Trustees may determine.

29. The Trustees shall meet after each annual election of Trustees at such time and place as shall be fixed at the annual meeting of members, for the purpose of organization, election of officers and the transaction of any other matters, and if a majority of the Trustees are present at such meeting no notice need be given the Trustees.

30. The Trustees may by resolution fix and change the time and place of regular meetings of the Trustees, and any action may be taken at any such regular meeting without prior notice thereof to the Trustees.

31. Special meetings of the Trustees may be called by the President and on the written request of five Trustees shall be called by the President.

32. Notice of each regular and special meeting of the Trustees, other than the annual meeting, shall be given each Trustee in writing, setting forth the time and place and if a special meeting, the purpose or purposes thereof, by post-paid mail or prepaid telegram, addressed to each Trustee at the address of such Trustee shown on the records of the corporation, mailed or telegraphed at least three days before the date fixed for such meeting.

33. Any Trustee may waive any notice of any meeting of Trustees, in writing, either before or after the meeting.

[fol. 759] 34. A majority of the Trustees shall be necessary to constitute a quorum, but a lesser number may ad-

journal from time to time, without further notice, until a quorum is secured.

35. Unless changed by a majority vote of the quorum present, the order of proceedings at each meeting of Trustees shall be:

- (1) Reading of minutes of preceding meeting.
- (2) Reports of officers.
- (3) Reports of committees.
- (4) Unfinished matters.
- (5) Miscellaneous matters.
- (6) New matters.
- (7) Elections.

Standing Committees

36. The Trustees shall each year, at their annual meeting, appoint nine standing committees of the Institute, each to consist of such number of persons skilled in the activities of such committee as may be selected by the Trustees, and each to have as its chairman such person as may be selected by the Trustees. *A majority of the members of each standing committee and sub-committee thereof shall be officers or employees of regular members of the Institute. The Chairman of each committee shall be a full time employee of the Institute or of a regular member of the Institute.

37. The standing committees of the Institute and their respective duties shall be as follows:

Committee on Market Research and Promotion

The Committee on Market Research and Promotion shall devote its efforts to the advancement of the competitive interests of the glass container and closure industries, and in connection therewith shall among other things:

[fol. 760] (a) Study the actual and potential uses of glass containers and closures, the comparative costs of packaging and distribution in glass and other materials, new product needs and possibilities, and the relative merits of the use of competitive packaging materials;

(b) Advance the competitive interests of the glass container industry in relation to other industries producing

* As amended at Annual Membership Meeting, May 18, 1954.

containers from other materials by maintaining a central organization for cooperation with Federal, state and local agencies, by investigating and opposing discriminatory laws and regulations and by encouraging uniform laws and regulations;

(c) Promote glass container markets through an integrated public relations program, the maintenance of a general center of information about the industry and its products, cooperation with trade organizations in the food and beverage and other industries, assisting in new product development and research with respect thereto, and cultivation of export markets;

(d) Obtain publicity for the industry through advertising and the furnishing of information with reference to the industry and its products, the providing of industrial exhibits, the publication of industry organs, and in all other proper manners;

(e) Provide educational work and facilities for keeping glass, closure and allied manufacturers and packers and bottlers abreast of current improvements and the needs for further improvements in the industry, and for retailers as to the most effective means of displaying, merchandising and handling glass packed products; and to promote educational work of interest to the industry in the schools and colleges;

(f) Assist packers and bottlers in the reduction of handling costs and other problems in the use of glass containers; and

[fol. 761] (g) Maintain an historical record of the industry and its accomplishments.

Traffic Committee

The Traffic Committee shall obtain to the fullest extent possible for the entire industry safe, convenient, expeditious, efficient and otherwise adequate transportation service at rates and under rules and regulations that are reasonably free from prejudice, preference and discrimination, and in connection therewith shall among other things:

(a) Deal with industry-wide problems concerning carriers and transportation; the obtaining of parity shipping rates for products in glass and competing containers; and the obtaining of lowest possible freight rates;

(b) Conduct conferences with carrier regional rate and rule authorities, officers of individual carriers and carriers associations for the presentation of industry-wide views of the industry's needs in reaching the widest possible markets and obtaining raw materials at rates which make such markets possible;

(c) Carry on negotiations with railways, express agencies, motor carriers, the Interstate Commerce Commission and others looking towards the publication of acceptable carton specifications and other satisfactory and economical requirements for the packaging for transportation of glass containers and glass packed products;

(d) Seek relief on behalf of the industry as a whole where necessary in formal proceedings before the Interstate Commerce Commission and state public utilities commissions; and

(e) Provide for cooperation and interchange of information between the industry and the several governmental authorities dealing with traffic and transportation problems.

[fol. 762] Committee on Government-Industry Relations

The Committee on Government-Industry Relations shall coordinate the resources of the industry for service to the government and the public during the period of the war and thereafter and provide liaison between the Institute and Federal, state and local governmental authorities, and in connection therewith shall among other things:

(a) Obtain information with reference to governmental activities relating to the industry;

(b) Operate and maintain an office for the Institute in the City of Washington, D. C.;

(c) As directed by the Trustees, represent the Institute, with the assistance of its officers, in relations with governmental authorities, and furnish governmental authorities with an official means of contact with the industry as a whole, provided that no member of the Institute or person acting on behalf of such member shall be restrained in any way from presenting views, furnishing data, or taking any position before any governmental agency; and

(d) Conduct surveys with reference to matters of interest of the industry and governmental authorities in the field of industry-governmental relations.

Committee on Labor Relations

The Committee on Labor Relations shall assist the industry through research and fact finding and by all other proper means in improving the relationship of employers and employees, and in connection therewith shall among other things:

(a) Provide a clearing house for manufacturers of glass containers and closures having problems involving labor, arrange conferences to discuss the employment and labor relations problems of the industry, and furnish information and advice to members of the industry with reference to labor problems;

(b) Develop procedures in handling labor matters;

[fol. 763] (c) Prepare for and take part in annual collective bargaining conferences with the Glass Bottle Blowers Association, the American Flint Glass Workers Union and other labor organizations;

(d) Collect and collate agreements between the Glass Bottle Blowers Association, the American Flint Glass Workers Union and other labor organizations and the several members of the industry, and inform the members of the industry with reference thereto, and as to job classifications rates of pay, hours of work, and conditions of labor provided therein, and also with reference to matters pertaining to employment and labor relations, directives, decisions and statements of policy of governmental agencies and boards which have the administration of Federal laws concerning collective bargaining, wage and salary stabilization, labor disputes, and the like;

(e) Provide a means for the settlement of disputes as to the interpretation of union contracts with the industry; and

(f) Secure the assistance, when deemed desirable, of labor relations counsel.

Committee on Testing Procedures

The Committee on Testing Procedures shall conduct and provide for experimental activities in connection with the diagnosis and elimination of manufacturing imperfections, the reduction of breakage, the reduction of weight of glass containers, the maintenance of glassware quality and the

definition of glassware characteristics, and other technical problems of the industry, and in connection therewith, shall among other things:

(a) Develop and review testing procedures and equipment and cooperate with others in the development of standards therefor;

(b) Prepare and revise from time to time a manual prescribing standard tests for glass containers;

[fol. 764] (c) Survey, from time to time, the causes of glass breakage;

(d) Furnish technical and scientific assistance to legislative and other governmental bodies;

(e) Conduct courses of instruction for technical men in the glass container and closure industries; and

(f) Provide technical data and other assistance in connection with litigation involving breakage and claimed defects in glass containers and assist packers and bottlers in formulating proper methods and procedures for inspection and testing of new and used glass containers.

Technical Committee on Glass Packed Products

The Technical Committee on Glass Packed Products shall:

(a) Conduct and provide for experimental activities having to do with the relative merits of packing and bottling in glass and other types of containers, the effects of such packing and bottling on food, beverages, and other products packed or bottled in glass, and the improvement and better preservation of such products; and

(b) Provide for the testing of the results of its activities by the proper governmental authorities and others.

Committee on Standards for Finishes

The Committee on Standards for Finishes shall develop standards for glass container finishes, so that there may be as many manufacturers as possible competing for the sale of glass containers, and in connection therewith, shall among other things:

(a) Engage in experimental efforts to improve manufacturing efficiency and better sealing practices;

(b) Develop, and, from time to time modify standard sizes of and specifications for finishes of glass containers [fol. 765] with a review to manufacturing economies, including the revision of specifications so as to permit maximum interchangeability of neck rings;

(c) Develop modifications in finish standards for new types of forming machines;

(d) Develop standard glass finish specifications for any new methods of sealing which may be invented from time to time;

(e) Make blue prints available setting forth technical data pertaining to finishes and their manufacture, and new and revised specifications for finishes; and

(f) Cooperate with the Bureau of Standards in connection with the foregoing.

Committee on Container Design and Specifications.

The Committee on Container Design and Specifications shall endeavor to simplify container supply for the packer and bottler by establishing groups of standard glass container designs and specifications on which a packer or bottler may rely in size and style of container, the laying out of filling lines and procedures in the packing of his products, and which, if accepted throughout the industry, will assure the user of glass containers standard designs irrespective of the source of supply so that there may be as many manufacturers as possible competing for the sale of glass containers, and in connection therewith shall, among other things:

(a) Make available specifications for groups of standard containers which, if the packer or bottler so desires, may be used in place of private mold designs in order to reduce container costs through the reduction of the amount of glass used in containers, the reduction of the number of standard capacities of containers by the elimination of old capacities, the reduction of mold costs, other economies in manufacture and economies in storage and transportation; [fol. 766] and also to bring about economy of use on filling lines and to increase the packer and bottler's sources of supply;

(b) Develop standard specifications for containers which can be efficiently made on all types of forming machines,

review and modify such specifications, and make available blue prints covering the same;

(c) Cooperate with similar committees of users of glass containers for the purpose of establishing standard specifications for containers for each packing and bottling industry;

(d) Work with the Bureau of Standards and state and municipal agencies in establishing container specifications and sizes consistent with municipal, state and Federal laws;

(e) Consult with packers, bottlers and manufacturers of packing and bottling machinery in connection with the design and functioning of glass handling machinery; and compile brochures from time to time, such as a machinery manual for the use of packers, bottlers and manufacturers of packing and bottling machinery, in order to facilitate the more efficient use of equipment regardless of the source of containers; and

(f) Give constant study to existing standards and consideration to the possibility of additional and future standards in connection with the frequent changes in use and progress in processing as well as technological changes in manufacture.

Committee on Package Design and Specifications

The Committee on Package Design and Specifications shall have as its principal function and purpose the consideration of all matters having to do with the safe, economical and efficient handling of glass containers and glass packed and bottled products as affected by the packaging thereof, and in connection therewith shall, among other things:

[fol. 767] (a) Develop methods of economizing in the use of paper and other packaging materials;

(b) Develop standard designs and specifications for cartons and other packages;

(c) Promote and participate in laboratory investigations of the strength of packaging materials;

(d) Compile brochures on carton specifications and packaging;

(e) Cooperate with the Traffic Committee in problems of interest to both committees; and

(f) Cooperate with the Bureau of Standards in connection with the foregoing.

38. Each standing committee shall, within the limits of the amounts appropriated to it therefor by the Trustees, perform its several duties hereinbefore set forth and engage in no activities not relevant to its functions set forth in this code of regulations without the express authorization of the Trustees, and make regular reports of all actions taken by it to the Trustees at least semi-annually. The Trustees shall make available to members of the Institute at least semi-annually all results of committee activities and the compilations of data prepared by the General Manager in pursuance of Section 60 hereof. The Trustees shall make the same information available to such non-member glass container and closure manufacturers and suppliers as shall make payments or contributions to the Institute upon the same basis as the payments made by members under Sections 10, 11 and 12 hereof. Upon application of one who reasonably in good faith intends to enter into the glass container or closure manufacturing business, the Trustees shall furnish him such compilation showing the then state of the glass container and closure manufacturing industries as he may request and as the Institute may have available, and if requested, shall furnish to such applicant such additional information as would be available to all members of the Institute, all at reasonable prices, representing the cost of [fol. 768] compiling the information requested and furnished, plus, if desired by the Institute, a reasonable profit. In the event of application to the Trustees for information by one not within the classes hereinbefore in this section mentioned, the Trustees may furnish such information or such part thereof, if any, as they see fit, upon such terms and conditions as they may deem proper.

39. No standing committee, or any officer or employee of the Institute, or the Trustees, in their respective capacities as such, shall ever, directly or indirectly, take any action, or engage in any activity the effect of which shall be unlawfully to prevent or retard competition through the entry of new units into the various fields of manufacture of glass containers or unlawfully to discourage the expansion of the industry, or otherwise to violate the anti-trust laws of

the United States, but the Trustees may from time to time make reasonable charges for information with respect to the results of the activities of the Institute as provided in Sections 13 and 38 hereof.

40. Neither the Institute nor its Trustees, committees, members, officers or employees shall ever attempt, directly or indirectly, to enforce compliance with any advice or recommendation of the Institute or of its Trustees, committees, members, officers or employees, or interfere or attempt to interfere in any way with the conduct of the business of any member or of any other corporation, association, partnership or individual; and no member or any other corporation, association, partnership or individual shall ever be under any obligation whatsoever to take advantage of or make any use whatever of the results of the activities of the Institute or any of its Trustees, committees, officers or employees.

41. The General Manager or Secretary of the Institute or a full time paid employee of the Institute shall attend each meeting of each standing committee and make a full and complete record of the proceedings of each such meeting, and report the same to the Trustees.

[fol. 769] 42. Each meeting of each standing committee shall be held at such place within or without the State of Ohio as the members thereof may determine.

43. Each standing committee shall meet after each annual election thereof at such time and place as shall be fixed at the annual meeting of Trustees, for the purpose of organization and the transaction of any other matters.

44. The members of each standing committee may by resolution fix and change the time and place of regular meetings of such committee, and any action may be taken at any such regular meeting without prior notice thereof to the members.

45. Special meetings of each standing committee may be called by the chairman and on the written request of three members thereof shall be called by the chairman.

46. Notice of each meeting of each standing committee shall be given each member in writing, setting forth the time and place thereof, by post-paid mail or prepaid telegram, addressed to each member at the address of such member shown on the records of the corporation, mailed or

telegraphed at least three days before the date fixed for such meeting.

47. Any member of a standing committee may waive any notice of any meeting of his committee, in writing, either before or after the meeting.

48. A majority of the members of each standing committee or sub-committee thereof (but only if a majority of any such majority are officers or employees of regular members of the Institute) shall constitute a quorum, but a lesser number may adjourn from time to time, without further notice, until a quorum is secured.

49. The members of each standing committee shall fix their own order of procedure, and such other rules not inconsistent with the other provisions of this Code of Regulations [fol. 770] for the conduct of their duties, including the appointment of sub-committees, as they shall deem advisable.

50. Any member of any standing committee may be removed by the Trustees at any time, with or without cause.

51. Any vacancy in any standing committee shall be filled by the Trustees.

52. The Trustees may provide such reimbursement for expenses to members of any committee or sub-committee thereof as they may, from time to time, determine.

Special Committees

53. The Trustees may appoint, or authorize the President to appoint, special committees, all of the members of each of which shall be officers or employees of regular members of the Institute. Such special committees may perform such lawful activities outside the scope of the activities of the standing committees as the Trustees shall direct and define. In the conduct of their activities special committees shall be subject to the provisions of Sections 42 to 47 and 49 to 52 hereof. A majority of any such committee shall constitute a quorum.

Officers and Employees

54. The officers of the corporation shall be a President, First Vice President and Second Vice President, who shall be elected annually from the Trustees to serve as such without compensation, until the next annual meeting of the

Trustees and until their successors are elected and qualified, and a General Manager, Secretary and Treasurer, who may be elected or appointed by the Trustees for such terms and upon such conditions and shall receive such compensation as the Trustees deem advisable.

55. Any two or more offices, except those of President and Vice President, or Vice Presidents, may be held by the same person.

[fol. 771] 56. The Trustees may create such other offices as they deem advisable from time to time and fill the same by election or appointment for such terms and upon such conditions as they deem advisable.

57. Any officer may be removed from office at any time by the Trustees by majority vote with or without cause.

President

58. The President shall be the chief executive officer of the corporation. He shall preside at all meetings of the members and of the Trustees; have general supervision and management, subject to the Trustees, of the affairs of the corporation; and shall perform, generally, all the duties usually performed by Presidents of like corporations, and such further and other duties as may, from time to time, be required of him by the members, or the Trustees.

Vice-Presidents

59. The First Vice-President shall perform all the duties of the President, in case of the absence or disability of the latter. If both the President and First Vice-President are absent, or unable to perform their duties, the Second Vice-President shall serve, and, in his absence or inability to perform his duties, the members or Trustees, as the case may be, may appoint a President pro tem.

General Manager

60. The General Manager shall, subject to the control and direction of the members, the Trustees and the President, have active charge of the general activities of the corporation, including its publicity, promotion, educational research and development work, and shall generally perform such duties as may be required of him by the members,

the Trustees and the President. He shall obtain from the regular members of the Institute and others any and all data, other than data as to prices and methods or speeds [fol. 772] of operation, which they shall be willing to and may lawfully furnish; shall compile and distribute compilations of such data (other than material usage), in such manner and to such persons as shall be directed from time to time by the Trustees; provided that no data with reference to capacity, production, shipments, stocks or sales covering any portion of the preceding* twenty days period shall at any time be distributed or directly or indirectly disclosed to manufacturers of glass containers or closures; and further provided that the General Manager shall keep confidential and separate data furnished by each corporation, association, partnership and individual, with reference to capacity, production, shipments, stock, net sales and material usage, to the end that such separate data shall never be disclosed to any other corporation, association, partnership or individual other than to a full time paid employee of the Institute whose duties require the use of such data, and who has undertaken to keep such data confidential as above provided with reference to the General Manager. No Trustee or member of the Institute other than counsel for the Institute shall ever be entitled to all or any part of such confidential data.

61. The General Manager shall give to the corporation a bond, in such amount and in such form and with such sureties as the Trustees may determine, for the faithful performance of the duties of his office. The amount of such bond may, from time to time, be changed by the Trustees.

Secretary

62. The Secretary shall keep the minutes of all the meetings of the members and the Trustees, and shall make a proper record of the same, which shall be attested by him. He shall give the notices required by the code of regulations, unless the Trustees shall otherwise direct, and shall perform such other duties as may be required of him by the members, the Trustees and the President. He shall be the

* As amended March 25, 1949.

custodian of the seal of the corporation and shall affix the [fol. 773] same to any instrument requiring the same, and shall attest it by his signature.

Treasurer

63. The Treasurer shall receive and have in charge all moneys and securities belonging to the corporation and shall deposit the same in the name and to the credit of the corporation in such banks or other depositories as may be designated by the Trustees. He shall disburse the funds of the corporation pursuant to the orders of the Trustees and the President. He shall keep an accurate account of the moneys, securities and other valuables received and disbursed by him and shall, at the annual meeting, and oftener when required either by the Trustees or the President, present a detailed statement of his receipt and disbursements and of all his transactions, together with a statement of the assets and liabilities of the corporation, and shall generally perform such other and further duties as may be required of him by the members, the Trustees or the President.

64. He shall give to the corporation a bond, in such amount and in such form and with such securities as the Trustees may determine, for the faithful performance of the duties of his office. The amount of such bond may, from time to time, be changed by the Trustees.

General Counsel

65. The Trustees shall employ a reputable attorney or firm of attorneys as General Counsel. The officers shall keep the General Counsel fully informed as to all activities and proposed activities of the Institute, its Trustees, committees and officers, and the General Counsel shall advise the Institute, its Trustees, committees and officers with respect to the legality of all activities and proposed activities. No activity shall be engaged in by any of them which the General Counsel has advised is illegal. The General Counsel shall have charge of all legal matters in which the [fol. 774] Institute is interested; and shall attend in person or by representatives all meetings of the members and Trustees and, upon request of any officer or committee

chairman, any committee meetings. Upon request of the Trustees, the President, the General Manager or the chairman or members of any committee, the General Counsel shall appear in person or by representatives before any public body on behalf of the Institute, and generally shall perform such other services of a legal nature as they or any of them may request. The General Counsel shall be entitled to receive reasonable compensation for services rendered to the Institute, its Trustees, committees and officers.

Other Officers and Employees

66. Other officers and employees of the corporation shall have such duties as shall be prescribed from time to time by the Trustees, or by the President or General Manager pursuant to authority conferred by the Trustees. In case of the absence or disability of any officer of the corporation, or for any other reason deemed sufficient by the Trustees, the Trustees may delegate his powers or duties to any other officer or to any Trustee for the time being, except that the duties of General Manager shall not be delegated to any person other than a full time paid employee of the Institute who is not an officer or employee of any member of the Institute.

Fiscal Year

67. The fiscal year of the corporation shall begin on the first day of January of each year.

Checks

68. All checks drawn by the corporation shall be signed by the President, General Manager and Treasurer, or any two of them.

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Seal

69. The seal of the corporation shall be circular in form and shall have inscribed thereon, "Glass Container Manufacturers Institute, Ohio, 1945."

Disposition of Assets

70. The corporation shall not sell, lease, mortgage or dispose of any real property owned by it or its entire assets except when authorized by a vote of a majority of the regular members present at a meeting called for such purpose if constituting a quorum.

Amendments

71. This code of regulations may be amended or repealed by the written assent thereto of not less than a majority of the regular members of this corporation, or by a majority vote of the regular members present at any annual meeting, or any special meeting called for that purpose, but for such part of the period of five years from the effective date of the final judgment in *United States v. Hartford-Empire Company, et al.*, No. 4426 in the United States District Court for the Northern District of Ohio, Western Division, as any defendant in said cause shall participate in any activity of this corporation pursuant to the order of said court entered May 15, 1945, no amendments shall be made to the provisions of Sections 5, 13, 36, 37, 38, 39, 40, 41, 53, 60, 65 and 71 hereof without the approval, in advance, of the United States District Court for the Northern District of Ohio, Western Division.

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GOVERNMENT'S EXHIBIT 317

**NATIONAL CANNERS ASSOCIATION
RESEARCH LABORATORY**

**PROCESSES FOR
LOW-ACID CANNED FOODS
IN GLASS CONTAINERS**

BULLETIN 30-L

Second Edition

WASHINGTON, D. C.

September, 1955

IMPORTANT POINTS FOR CANNERS

1. *Keep your retort operators informed.* Give them a copy of this bulletin or written instructions on processes to be used. See page 19.
2. *Keep your other key men informed.* Insist that all key men read and understand this booklet.
3. *Equip your retorts properly.* Tested and properly installed retort instruments are essential. Instruments need periodic testing.
4. *Don't reduce processes.* Processes in this bulletin give the highest quality consistent with safety.
5. *Code your jars.* The time period during which each code lot is packed should be as short as practicable—in no case longer than one day.
6. *Keep your factory clean.* High bacterial contamination may lead to spoilage. See Appendix.
7. *Follow approved procedures.* The procedures given in this bulletin are based on sound theory and wide practical experience.

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APPENDIX

Precautions for handling glass
jars

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PROCESSES FOR LOW-ACID CANNED FOODS IN GLASS CONTAINERS

INTRODUCTION

THIS is the 2nd edition of Bulletin 30-L. The first edition was prepared in 1948 to satisfy an increasing demand for authentic information on processes to be used for low-acid foods packed in glass containers.

Process suggestions given in the bulletin are, in general, based on heat penetration data obtained on the products by the National Canners Association and the glass container manufacturers. Where such information was not available factors were used for converting processes for cans to processes for glass jars. These factors were developed from basic data obtained on bentonite in the laboratories of the National Canners Association in a cooperative research project sponsored by the Glass Container Manufacturers Institute. This project involved an extensive investigation on the heating rates of bentonite suspensions in glass jars and tin cans of comparable sizes, and the preparation of experimental inoculated packs of various products in both types of containers.

When further data and information are available, this bulletin will again be revised. Previous editions should then be discarded.

Prefacing the list of processes are recommendations with respect to proper retort equipment and its operation for best results. A thorough understanding of these recommendations is necessary for the best use of the bulletin and is essential for the correct interpretation and proper use of the processes.

Following the list of processes is an appendix which gives information regarding sources of spoilage contamination and its control, the significance of sugar and starch contamination, and precautions for the proper handling of glass containers in the cannery.

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While the procedures recommended in this bulletin are based on sound theory and wide practical experience, references to methods or types of equipment are not to be construed as a guarantee of their sufficiency. The recommendations contained herein are not to be considered as creating any assurance or warranty with respect to production or cost or any responsibility for damage, spoilage, loss, accident or injury resulting from the use of this information by anyone.

IMPORTANCE OF PROPER EQUIPMENT AND PROCEDURE

Foods in glass containers are processed under water with superimposed air pressure. In order to be certain that all jars secure the amount of heat treatment required to prevent spoilage, careful control and recording of temperatures and adequate circulation of water to ensure uniform temperatures are essential. This is true because processes for canned foods are determined by tests made with the jars at a definitely controlled and specified temperature, and when these processes are applied in commercial practice identical conditions must be met. The suggestions under "Equipment" and "Procedure" are based on the results of careful studies to determine what types of equipment and procedure may be relied upon to give the required heat treatment under commercial conditions. Careful attention to details is essential to ensure successful processing.

EQUIPMENT

Retort

The processes contained in this bulletin are for discontinuous, non-agitating (still) retorts. For other types of retorts, processes should be obtained from a laboratory connected with the canning industry.

The retort must have strength sufficient for processing glass containers under water with superimposed air pressure.

At the start of each packing season, the retort should be submitted to a hydrostatic pressure test at 45 psi. pressure.

Since either vertical or horizontal retorts may be used, the

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general details of these two types will be considered collectively and the specific details outlined separately.

Retort Installation

For proper operation each retort should have the following items of equipment:

- (1) *Door or Lid-Securing Devices and Gaskets.* Before subjecting the retort to pressure, the door or lid-securing devices should be examined carefully and worn parts replaced. The gasket should be checked to make sure it is tight and in good condition. For vertical retorts it is recommended that not less than 8 wing nuts per retort be used. Consult the American Society of Mechanical Engineers, 29 West 39th St., New York 18, N. Y., Code for non-fired pressure vessels. For details regarding the ASME Code, see "Accident Prevention Manual for Industrial Operations", Section 4 Pressure Vessels, published by the National Safety Council Inc., 425 North Michigan Avenue, Chicago 11, Illinois. Section 4 may be obtained as a separate reprint.
- (2) *Safety Valve.* A safety blow-off valve, of at least 2 inch size, should be provided, separate from the overflow and located above the water level. On vertical retorts this should be a side connection with piped outlet. The safety valves should comply in capacity with local safety codes or the A.S.M.E. Code for unfired pressure vessels.
- (3) *By-Pass Valves.* All automatic control valves should have manually operated by-pass valves.
- (4) *Steam and Air Valves.* There should be a manually operated valve before and after the steam and air control valves.
- (5) *Drain Valve.* Because of the importance of maintaining the water level and preventing leakage, a 125 psi., non-clogging, water-tight valve is required.
- (6) *Crate Supports.* Lugs, tracks, or a saddle type support should be used. A ring is also satisfactory for vertical retorts. In no case should baffle plates be used.

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(7) *Thermometer Pocket.* The thermometer pocket or well should:



- (a) Preferably be of the hemisphere type having a minimum diameter opening into the retort wall of 9 inches (see sketch).
- (b) If of the rectangular type, have a minimum opening into the retort wall of 8 inches by 8 inches.
- (c) Be designed with a depth of 4 inches or more.
- (d) Have a provision for the pressure gauge in the same pocket as the thermometer (see diagram, page 16).

(8) *Temperature Control and Indicating Equipment.* Adequate automatic controls are essential. Manual control of temperature is not recommended because the possibility of error is too great.

Control and indicating equipment, such as thermometers and pressure gauges, should be so placed with respect to light and position that they are easily readable.

- a. *Indicating mercury-in-glass thermometer.* The thermometer should have a temperature range of not more than 100°F., for example, 170°F. to 270°F., and the scale division should be of either one degree or two degrees each—never greater than two degrees. The temperature scale of the indicating thermometer should be at least 7 inches in length. A second thermometer covering the cooling range is also advisable.

The thermometer bulbs should be located in such a position that they are beneath the surface of the water throughout the process. On horizontal retorts, it is desirable

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that this entry be made in the side at the center. The thermometer bulbs should be inserted directly into the shell.

- b. *Recording temperature indicator.* The chart should be easily readable to 1°F. and should be graduated in not to exceed 2°F. divisions within the range of plus and minus 10°F. of the process holding temperature used. All charts should have a working scale of not less than 3 inches. The bulbs for these thermometers should be located adjacent to the bulb of the mercury thermometer, except in the case of a vertical retort equipped with a combination controller-recorder.

(9) *Location of Temperature Control Bulb.* In vertical retorts the temperature control bulb should be located at the bottom of the retort, below the lowest crate rest, in such a position that the steam does not strike it directly: such as in a "dead" quadrant described under (11) on page 10. In horizontal retorts, the temperature control bulb should be located between the water surface and the horizontal plane passing through the center of the retort, so that there is no opportunity for direct steam impingement upon the control bulb.

(10) *Pressure Control and Indicating Equipment.* Adequate automatic controls are essential. Manual control of pressure is not recommended because the possibility of error is too great.

- a. *Water level and pressure controller.* The top layer of jars should be covered with about 6 inches of water, and the overflow located accordingly. The opening of the overflow should be larger than the water supply line. An adjustable pressure relief, or control, valve should be installed in the overflow line of a capacity sufficient to prevent increase in retort pressure when the water valve is wide open.
- b. *Indicating pressure gauge.* The pressure gauge should be graduated in 1 or 2 psi. divisions and have a range of

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0 to 30, or 0 to 60 psi. The minimum diameter of the dial should be $4\frac{1}{2}$ inches and the gauge should preferably be of a type in which the operating mechanism is independent of the case. The gauge should be connected to the retort by means of a gauge siphon or gooseneck. In a vertical retort the gauge should be located at the thermometer pocket. In the horizontal retort the gauge may be either in this position or at the top of the retort.

(11) *Steam Introduction.* The general requirement is for a good steam distributor in the bottom of the retort, providing uniform heat distribution throughout the retort and quick come-up time.

For vertical retorts these results can be achieved by any one of several methods. One means is an assembly of six pipes radiating from a center coupling with fish-tail nozzles at the end of each pipe and directing the steam up the walls of the retort outside the crates. Another means is a four-legged cross in which each pipe leg is perforated along one side only. The legs are arranged in opposing pairs to give alternate live and dead quadrants.

In horizontal retorts, the steam distributor should run the full length of the bottom of the retort with perforations distributed uniformly along the upper part of the pipe.

For details of installation of a steam distribution system, consult a laboratory connected with the canning industry. Details on the mode of operation where the retorts for processing glass are to be used for steam processing of metal containers may also be obtained from a laboratory connected with the canning industry.

(12) *Temperature Controls.* The steam valve arrangement should consist of an automatic, air pressure-to-open, valve or valves.

(13) *Water Level Indicator.* A means of determining the water level in the retort should be provided. This can be accomplished by using a gauge water glass or series of petcocks at different levels on the retort but should be supplemented with an automatic warning device such as that described.

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below. Where the gauge water glass is used, attention should be given to proper safety factors.

Drain valves sometimes leak during a process because of the presence of a piece of glass in the valve, or for some other reason, and this may result in some of the upper layers of jars being above the water line during the process. Jars exposed in this manner would be underprocessed because of the lower temperature of the steam-air mixture. In view of this it is strongly advised that an automatic warning device, preferably actuating a horn, be installed in each retort to indicate to the operator that the water has fallen below a safe level (See *Water Level*, page 22).

(14) *Air Supply and Controls*: A reliable supply of compressed air at the proper pressure and a means of introducing it into the retort at an adequate rate are required. The air is required both to maintain water circulation and to maintain the necessary pressure (See page 22). An automatic pressure control unit is recommended for both vertical and horizontal retorts. In both, the air should be introduced with the steam at the bottom of the retort to control "chatter".

The amount of air pressure required will depend upon the steam pressure in the lines to the retort, and upon the location of the point at which the air is introduced into the steam line. It should be in the range of 50 to 70 lbs. psi. If the air pressure at this point does not exceed the steam pressure, no air will pass into the retort during the come-up period; thus, "chatter" will not be controlled. Air circulation should be maintained continuously during the process and cool to ensure uniform temperature distribution and proper temperature and pressure control.

The amount of air required to prevent "chatter" during the come-up depends to a considerable extent on the steam pressure in the line and the back pressure in the steam distributor itself. The amount of air necessary may vary from 8 to 15 cfm. Further details on the amount of air required during this period can be obtained from a laboratory connected with the canning industry.

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The amount of air required during the process and cool periods will vary with the size of the retort. Three (3) cfm is suggested for three (3) crate vertical retorts and four (4) cfm for four (4) crate vertical retorts. These requirements assume that there is no leakage from the retort either through the gasket or through the overflow valves.

A check valve should be provided in the air supply line to prevent water from the retort getting into the system. An air supply line with hand operated valve connected to the head space of the retort may also be provided for auxiliary pressure control. *A separate compressor is recommended for operating the control instruments. If a separate compressor is not provided, the air line to the instruments should be a separate line from the compressed air tank.*

(15) *Air Cleaners.* The installation of an adequate air cleaner is required in the line which supplies air for activating control valves.

(16) *Cooling Water.* A check valve should be included in the cooling water line to prevent drop of pressure in the retort in case the water pressure should fall below the retort pressure.

a. *Vertical retorts.* Cooling water should be introduced at the top, below the water level, either through a minimum of four openings equally spaced around the circumference of the retort or through a ring. This recommendation assumes a feeder pipe of 1 inch minimum size with a minimum of 50 psi. water pressure at the retort. When water pressures of 80 psi. or over are encountered, the 1-inch line should be restricted or reduced to prevent excessive water flow rates or pressure during cooling.

b. *Horizontal retorts.* At the start of the cool, water should be introduced into the suction side of the pump so that the cold water can be mixed with the hot water to prevent breakage of jars from too sudden a change in temperature. Near the end of the cool, water can be admitted rapidly through the spreader in the top of the retort.

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Retort Details

1. *Vertical retorts.* The general arrangement of a suitable vertical retort is given in the diagram (page 16). Details of the piping diagrams and specifications may be obtained from a laboratory connected with the canning industry.

Several specific details of vertical retorts require special emphasis:

- a. *Retort and crate diameters.* There should be a minimum of $1\frac{1}{2}$ inch clearance between the side wall of the crate and the retort wall to allow ample water circulation up the retort wall. The inside diameter of the retort should be a nominal 42 inches and the outside diameter of the crates should be a nominal 38 inches. Not only should diametric clearance be provided, but centering guides should be installed to assure proper clearance between the side wall of the crate and the retort wall.
- b. *Retort headspace.* A minimum of 4 inches headspace should be maintained between the top water level and the top of the retort shell.

2. *Horizontal retorts.* The general arrangement of a suitable horizontal retort is given in the diagram (page 17). Details of the piping diagrams and specifications may be obtained from a laboratory connected with the canning industry.

Several specific details of horizontal retorts require special emphasis:

- a. *Water circulating system.* A water circulating system is suggested to ensure uniform heat distribution. This system should be installed in such a way that water will be drawn from the bottom of the retort through a suction manifold and discharged through a spreader which extends the full length of the top of the retort.

The size of the suction manifold, circulating system, pump, and water spreader, will depend on the size of the retort. The following are suggestions for minimum sizes to be used:

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For retorts under 15 feet in length

1. Size of suction manifold 2 inches
2. Number and size of suction outlets from retort to manifold Two 1½-inch, equally spaced
3. Size of circulating line and pump 2 inches
4. Size of water spreader 2 inches

For retorts over 15 feet in length

1. Size of suction manifold 2½ inches
2. Number and size of suction outlets from retort to manifold One 2-inch outlet for each 8 feet of retort length or fraction, thereof
3. Size of circulating line and pump 2½ inches
4. Size of water spreader 2½ inches

The holes in the water spreader should be uniformly distributed and should have an aggregate area not greater than the cross-section area of the outlet line from the pump.

The suction outlets should be protected with a screen to keep debris from entering the circulating system, because such debris may foul the pump and clog the water spreader holes.

The pump should be equipped with a pilot light or other signaling device to warn the operator when it is not running, and with a bleeder to remove air when starting operations.

- b. *Hot water supply.* It is advisable to have a hot water supply for filling retorts in order to reduce come-up times and avoid thermal shock. A steam heated storage tank equipped with temperature controller and thermometer

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should be provided into which hot water from cooling retorts can be discharged and saved for the next cook. The hot water outlet of the tank should be connected to the retort circulating system on the suction side, so that the circulating pump can be used to pump the water from the tank into the retort.

- c. *Retort headspace.* The amount of headspace necessary varies with the diameter of the retort. In general, it may be said that the water level should not be above the bottom of the water spreader.

Stacking Equipment

Crates, trays, gondolas, etc., for holding jars stacked in a vertical position should preferably be of strap iron or expanded metal. When perforated metal crates are used the perforations in the bottoms should be at least 1-inch holes on 1¾-inch centers, or their equivalent (1½-inch on 2½-inch centers, or 1¾-inch on 3-inch centers).

Maintenance of Equipment

Processing equipment should be maintained in a satisfactory operating condition. The condition of the openings in the steam distribution system should be ascertained, periodically to ensure continued efficiency. If a steam cross is used in a vertical retort, the position of the cross should be checked at intervals to see that the steam openings have not changed position relative to the bulb of the temperature controller, which should be in a "dead" location. Safety valves should be tested frequently. Instruments (gauges, thermometers, recorders) should be checked for accuracy at least once a year. Water valves and compressed air valves, especially the latter, should be checked frequently for leaks.

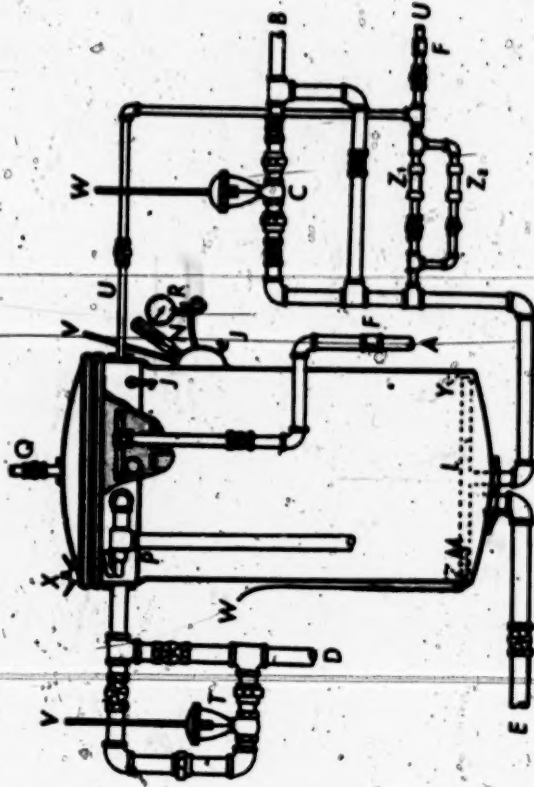
Before each operating season and after any considerable idle period, the entire retort hook-up should be examined carefully, and each retort should be brought to processing temperature (without a load) to test the system for leaks and to test the instruments and control equipment for proper operation and accurate recording.

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VERTICAL RETORTS

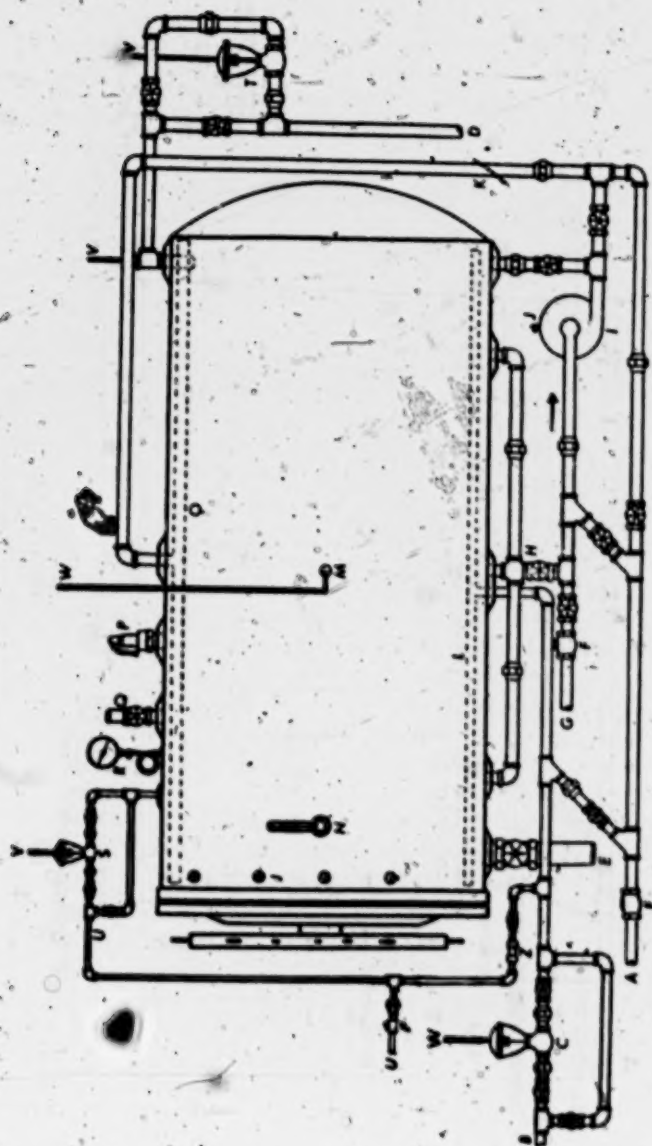
BASIC REQUIREMENTS FOR
RETORTS USED IN
PROCESSING GLASS

- A Water line
 B Steam line
 C Temperature control
 D Overflow line
 E Drain line
 F Check valves
 G Line from hot water storage
 H Suction line and manifold
 I Circulating pump
 J Petcocks
 K Recirculating line
 L Steam distributor
 M Temperature controller bulb
 N Thermometer
 O Water spreader
 P Safety valve
 Q Vent valve
 R Pressure gauge
 S Inlet air control
 T Pressure control
 U Air line
 V To pressure control instrument
 W To temperature control instrument
 X Wing nuts—8 required
 Y Grate support
 Z₁ Constant flow orifice valve used during come-up
 Z₂ Constant flow orifice valve used during cool



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HORIZONTAL RETORTS



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PROCEDURE

The glass containers indicated in this bulletin are those sealed with friction type metal closures, which are not intended to hold internal pressure. The processing of the closed jars is effected in water filled retorts, with a top cushion of air under pressure to hold the closures in hermetic seal throughout the retort cycle.

The headspace for most products should be not less than 6% of the container volume (measured at the sealing temperature) for cooks in the range of 240 to 250°F. Unless the product temperature is very high, less headspace will not allow sufficient space for expansion of the contents of the sealed container and as a result the closure may be displaced.

The following measurements will provide adequate headspace under usual conditions:

Container	Headspace from Top of Finish (Volume in no case less than 6% of jar capacity)
Baby jar	3/16 inch
Junior jar	3/16 inch
No. 303 jar	3/8 inch
No. 2½ jar	7/16 inch

For most products, the temperature at the time of sealing must be above 130°F. Lower sealing temperatures require larger headspaces than those listed above to accommodate product expansion.

In general, retort operating pressure should be 28 to 30 psi. for cooks in the temperature range of 240-250°F.

Acidification

Unless some acidification procedure is followed, sterilization of certain low-acid foods by heat produces unmerchantable products. Notable examples are Globe artichokes and onions. Under proper control such products may be acidified to the point where they are no longer low-acid and then may be processed in boiling water. However, this procedure should not be followed without consulting a laboratory connected with the canning industry. Experience has shown that careful supervision of all details, particularly the blanch, fill and

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brine, is essential when acidification is included in the processing procedure.

Coding

All containers should be coded by marks to identify the time of packing. The time period during which each code lot is packed should be as short as practicable—in no case longer than one day. Strict adherence to this rule has proved to be good economy. Embossing code marks in metal closures is undesirable because of the possibility of corrosion. It is preferable that closure coding be done with ink.

Process

The term "process" as used in this bulletin designates the heat treatment expressed in terms of temperature and time given the product after the container is sealed. The basic, or minimum, requirement for the process for any product is that it be sufficient to destroy *Clostridium botulinum*, the organism of greatest known resistance to heat which, by reason of its survival, may be detrimental to health. There are other types of bacteria still more resistant to heat which may cause spoilage if the product is contaminated with them.

The efficiency of any process is dependent on the heat resistance and the number of contaminating bacteria in the product. In general, the processes listed in this bulletin are regarded as adequate when something greater than an average number of spoilage organisms is present. In some cases contamination by spoilage bacteria may be so high and/or the bacteria of such great resistance to heat that the suggested process may be inadequate to prevent spoilage, and it is therefore essential that all contamination be kept as low as possible. (See Appendix for information regarding precautions which should be taken to keep spoilage contamination low.)

Operation of Cook Room

In order to ensure that unprocessed or underprocessed jars do not reach the warehouse, it is recommended that:

- (1) Processes for all products be posted in a conspicuous place near the retorts.

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- (2) All baskets, trucks, cars or crates containing unretorted material be plainly and conspicuously marked. If several products are being packed at the same time, each product should also be plainly indicated.
- (3) A distinctive marker be hung from the retort opening when the retort holds unprocessed jars.* It should be so placed that the door or lid cannot be closed before the marker is removed.
- (4) A retort not be closed until the operator indicates that he is ready to start the process.
- (5) Jars of unknown status with regard to process, such as any found on the cook room floor, be opened and their contents discarded.
- (6) Adequate precautions be taken to clear exhaust boxes and precookers of all jars at the end of each day's operations.

Rapid Handling and Prompt Retorting of Filled Jars

A long holding period between filling and sealing or between sealing and retorting jars may result in souring, off-flavor, and loss of vacuum. Processing should follow within one-half hour after sealing. If longer times are required to obtain enough jars to fill a retort, processing of partial retort loads should be practiced.

Position of Jars in Retort

Heat penetration in canned foods containing freely flowing liquid is mainly by convection currents. The general trend of these currents is in a vertical direction, consequently in the product being heated they seek channels which permit such motion. Where their progress is impeded or baffled by solid material, the currents flow around the obstruction to the nearest point at which they can pass. For this reason the alignment of certain foods in the jar is of the greatest importance as regards heat penetration.

Where the packing or filling of any product in the jar results in stratification, the jars should be processed in such position that the plane of stratification is vertical. In the case of aspara-

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gus, for example, the spears are generally parallel and tightly packed in the jars in a vertical position, so that the channels containing liquid are parallel to the spears. As a result, the speed of heat penetration is greater when the jars are placed upright in the retort.

Products such as peas and cut green beans consist of small solid bodies, fairly uniform in size and evenly distributed throughout a liquid medium; consequently the rate of heat penetration is little influenced by the position of the jars in the retort.

Stacking of Jars

Jars should be so stacked as to permit the free circulation of water throughout the retort load. Solid or insufficiently perforated metal trays, crates, or gondolas should not be used, for such equipment can lead to poor heat distribution.

Initial Temperature

The term "initial temperature" as used herein designates the average temperature of the jar contents at the time steam is turned on for the process. Just prior to the start of the process, the contents of the container used for checking the initial temperature should be shaken or stirred and the temperature determined. This container should be representative of the coldest jars in the retort load and should have an initial temperature equal to or greater than the initial temperature specified in this bulletin. The specified initial temperature is to be regarded as a prerequisite minimum of the process suggested.

Where no initial temperature is specified in the tables, it is understood that this is not important between commercial limits such as 130-170°F.

Retort Cycle

In processing most products, the highest quality will result if the retort is brought to processing temperature quickly, the timing of the process is accurate, and the process is completed by prompt and rapid cooling. This procedure not only protects the quality of the product but also shortens the total time

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required for each processing cycle and so effects time economy in the use of the retort. It applies to all processing temperatures and is especially important when the temperature is above 240°F.

During the retort cycle there are a number of details that must be observed if reliable processing is to result.

Water Level. In vertical retorts the starting water level should be sufficient to cover the crates of filled jars as they are being loaded into the retort without a tendency to cause excessive overflow, yet bring the water level to the overflow pipe at the time of the loading of the last crate. To minimize thermal shock to the jars and to promote rapid heating efficiency as soon as the retort is closed, the temperature of the water should be adjusted by the introduction of water or steam to approximately that of the product in the filled jars. If the temperature of the water is more than 15°F. above the sealing temperature of the jars, there is a possibility of displacing the friction closures. The level of the water over the top layer of jars should be about 6 inches. No extra jars should be placed on the top of the last load, if they are not covered by at least this depth of water.

For efficient operation of horizontal retorts, the use of a reserve water storage tank is advised. As soon as the retort is closed, water should flow from the tank into the retort until the top layer of jars is covered by about 6 inches of water. The water temperature should be approximately that of the product in the jars at the time of sealing. Use of water at a substantially higher temperature may cause friction closures to be displaced. Water at substantially lower temperatures may cause breakage. *The water level must remain at approximately 6 inches above the top layer of jars during the entire come-up-time, cook, and cool.*

Air Pressure. The air to the bottom of the retort must be turned on immediately after closing the retort and the pressure built up promptly to the operating range. The steam is then turned on. The operating pressure must be maintained throughout the come-up, process and cool.

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Coming-up Time. Timing of the process should not begin until the specified retort temperature has been reached and agreement is noted between the recording thermometer and the mercury thermometer.

Cool. At the end of the specified process time the steam should be shut off and the operating pressure maintained with air. The cooling procedures should be those specified on pages 11 and 12 of the bulletin under Sections 14 and 16. The duration of the water cooling period either in the retort alone or in combination with cooling canals or sprays should be sufficient to bring the temperature of the contents to an average of 100°F. Water cooling should not be continued to the point where external rusting of the container closure may occur.

Storage

When jars whose contents are at temperatures substantially above 100°F. are stacked closely together, and especially if they are sealed in fiber cases, they cool so slowly that spoilage by thermophilic bacteria and injury by heat to the quality of the product (stack-burn) may occur. Such jars should be air cooled before they are put into storage.

CAUTION

To facilitate the presentation of the process times and temperatures in tabular form, it has been necessary to use a number of footnotes. Those who use the bulletin are cautioned to read the footnotes in connection with the tables to which they refer.

JAR DIMENSIONS

The jar sizes are given in the nomenclature usually employed in the industry, which avoids the confusion incident to conflicting local names.

In this system, the jars are identified by a statement of their dimensions (over-all diameter and over-all height). Each dimension is expressed as a number of three digits. The left-hand digit gives the number of whole inches, while the two right-hand digits give the additional fraction of the dimension expressed as sixteenths of an inch.

[fol. 800]

The first number given in the size of each jar is the diameter, and the second number is the height. For example, a No. 2½ jar, designated as 401x414, is 4½ inches in diameter and 4½ inches in height, that is, within manufacturing tolerances.

The characteristics of the common sizes of glass jars covered in the Process Tables are:

Container	Dimensions	Approx. Overflow Cap.—Fl. Oz.
Baby jar	200x309	5.0
Junior jar	208x401	8.1
No. 303 jar	303x411	17.0
No. 2½ jar	401x414	28.4

In those cases where the processes apply to jars other than those listed above, the dimensions are indicated under the respective process tables. If jars having capacities or dimensions not listed in the process table are used, consult a laboratory connected with the canning industry.

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PROCESS TABLES

I.—VEGETABLES AND VEGETABLE PRODUCTS

Artichokes, Globe

Pressure cooks adequate for sterilization render artichokes and artichoke hearts unmerchantable. The Standard of Identity promulgated under the Food, Drug and Cosmetic Act requires that artichokes be acidified to ensure safe processing in boiling water and thereby ensure preservation without loss of merchantability. Careful supervision of all details, particularly blanch, fill, and brine, is essential when acidification is included in the processing procedure. These products should not be packed without consulting a laboratory connected with the canning industry.

Asparagus Spears, green (a)

<u>Jar size</u>	<u>Dimensions</u>	<u>Initial temperature</u> <u>Deg. F.</u>	<u>Time at</u> <u>240° F.</u> <u>Min.</u>
14 oz. tapered.....	411x311x206	140	28
		170	26

Baby food, chopped: See Vegetables, chopped

Baby food, strained: See Vegetables, strained

Beans, green or wax, whole or cut

<u>Jar size</u>	<u>Dimensions</u>	<u>Time at</u> <u>240° F.</u> <u>Min.</u>
303.....	303x411	25
2½.....	401x414	30

Beans, kidney: See Beans, mature, etc.

Beans, Lima, succulent (b)

<u>Jar size</u>	<u>Dimensions</u>	<u>Time at</u> <u>240° F.</u> <u>Min.</u>
303.....	303x411	45

(a) These processes are for all green asparagus spears packed into the jar with the tips at the tapered or narrow end and processed tips up (cap down).

(b) For "Lima beans, dry soaked" the processes given under "Beans, mature, etc." should be used.

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Beans, Soy: See Beans, shelled types, succulent (except Limas)**Beans, mature, and soaked dried legumes, shelled types in unthickened sauce (a)**

<u>Jar size</u>	<u>Dimensions</u>	<u>Time at 240° F.</u> <u>Min.</u>
303	303x411	60
2½	401x414	65

Beans, shelled types, succulent (except Limas) (b)

<u>Jar size</u>	<u>Dimensions</u>	<u>Time at 210° F.</u> <u>Min.</u>
303	303x411	50

Beans with pork, or baked beans (c)

<u>Jar size</u>	<u>Dimensions</u>	<u>Initial temperature</u>	<u>Process time at</u>	
		<u>Deg. F.</u>	<u>240° F.</u> <u>Min.</u>	<u>250° F.</u> <u>Min.</u>
303	303x411	140	100	85
303	303x411	180	85	70
2½	401x414	140	135	115
2½	401x414	180	115	95

Beets, whole, cut, quartered, diced, sliced, or shoestring (d)

<u>Jar size</u>	<u>Dimensions</u>	<u>Time at 240° F.</u> <u>Min.</u>
303	303x411	35
2½	401x414	40

(a) Classification of this type of product is rather uncertain, and if doubt exists consult a laboratory connected with the canning industry. Unthickened sauce is a packing medium that contains no tomato pulp or similar viscous material and not more than 2½ pounds of starch per 100 gallons of sauce.

(b) These processes are suggested for all succulent shelled beans (except Limas) that are packed in water, with or without, salt, sugar, seasoning, etc.

(c) The process for the sterilization of beans in sauce depends to some extent upon the sauce formulation with respect to tomato pulp and starch content. These processes apply to beans packed in a heavy sauce. If these processes result in a product of unsatisfactory quality, it is recommended that a process for a particular sauce formulation be obtained from a laboratory connected with the canning industry.

(d) If beets are lye-peeled, the cooks apply only provided the lye has been completely removed by washing.

[fol. 803]

Carrots, whole, cut, quartered, sliced, diced or shoestring (a)

	<u>Jar size</u>	<u>Dimensions</u>	<u>Time at 240° F.</u> <u>Min.</u>
303	303x411	30
2½	401x414	30

Carrots and Peas: See Peas and Carrots**Carrot Juice: See Specialties****Corn, cream style, or succotash (b)**

	<u>Jar size</u>	<u>Dimensions</u>	<u>Initial temperature</u> <u>Deg. F.</u>	<u>Time at 240° F.</u> <u>Min.</u>	<u>Time at 250° F.</u> <u>Min.</u>
303	303x411	160	105	80
303	303x411	180	100	75

Corn, whole kernel, in brine

	<u>Jar size</u>	<u>Dimensions</u>	<u>Time at 240° F.</u> <u>Min.</u>	<u>Time at 245° F.</u> <u>Min.</u>	<u>Time at 250° F.</u> <u>Min.</u>
303	303x411	50	40	30

Corn on the cob

Processes necessary for vacuum packed corn on the cob are dependent to a marked degree upon the factors of maturity, variety, fill, amount of water added, and conditions tending to reduce the vacuum. It should not be packed without directions from a laboratory connected with the canning industry.

Hominy, lye or pearl

	<u>Jar size</u>	<u>Dimensions</u>	<u>Time at 240° F.</u> <u>Min.</u>
303	303x411	75
2½	401x414	90

(a) These cooks apply only to a brine pack. Other styles of carrots, including carrot chips, should not be packed without directions from a laboratory connected with the canning industry. If carrots are lye-peeled, the cooks apply only provided the lye has been completely removed by washing.

(b) These cooks apply to succotash prepared from cream style corn and beans. For succotash consisting of whole kernel corn and beans in brine use the processes for whole kernel corn in brine.

[fol. 804]

Onions

Pressure cooks adequate for sterilization render onions unmerchantable. It has been found necessary, therefore, to acidify this product to permit safe processing in boiling water and thereby ensure preservation without loss of merchantability. Careful supervision of all details, particularly blanch, fill, and brine is essential when acidification is included in the processing procedure. This product should not be packed without consulting a laboratory connected with the canning industry.

Peas

	<u>Jar size</u>	<u>Dimensions</u>	<u>240° F.</u> <u>Min.</u>	<u>Time at</u> <u>245° F.</u> <u>Min.</u>	<u>250° F.</u> <u>Min.</u>
303		303x411	45	35	25

Peas, dry soaked: See Beans, mature, etc.

Peas, Black-eye: See Beans, mature, etc.

Peas, Crowder: See Beans, mature, etc.

Peas and Carrots

	<u>Jar size</u>	<u>Dimensions</u>	<u>Time at</u> <u>240° F.</u> <u>Min.</u>
303		303x411	45

Peppers or Pimientos, Green

Pressure processes adequate for sterilization render green peppers or green pimientos unmerchantable. It has been found necessary, therefore, to acidify these products to permit safe processing in boiling water and thereby ensure preservation without loss of merchantability. Acidification must be carefully controlled. For detailed procedures consult a laboratory connected with the canning industry.

Peppers or Pimientos, Red

Acidification of red peppers or red pimientos is desirable to prevent spoilage, even though it may not be necessary from the standpoint of public health. Acidification must be carefully controlled. For detailed procedures consult a laboratory connected with the canning industry.

[fol. 805]

Potatoes, Sweet, whole, in syrup

In view of the lack of standardized canning procedures for sweetpotatoes, any packer of this product should have direct assistance from a laboratory connected with the canning industry.

Potatoes, White, sliced or diced, in brine

<u>Jar size</u>	<u>Dimensions</u>	<u>Time at</u>	
		<u>240° F.</u>	<u>250° F.</u>
		<u>Min.</u>	<u>Min.</u>
303	303x411	40	30
2½	401x414	45	35

Potatoes, White, small whole, in brine

<u>Jar size</u>	<u>Dimensions</u>	<u>Time at</u>	
		<u>240° F.</u>	<u>250° F.</u>
		<u>Min.</u>	<u>Min.</u>
303	303x411	35	25
2½	401x414	40	30

Pumpkin or Squash

<u>Jar size</u>	<u>Dimensions</u>	<u>Initial</u>	<u>Time at</u>	
		<u>temperature</u>	<u>240° F.</u>	<u>250° F.</u>
		<u>Deg. F.</u>	<u>Min.</u>	<u>Min.</u>
303	303x411	160	85	70
303	303x411	180	80	65
2½	401x414	160	125	105
2½	401x414	180	110	90

Soups: See Specialties

Spinach: See Vegetables, chopped and Vegetables, strained

Squash: See Pumpkin or Squash

Succotash: See Corn, cream style

Vegetables, chopped (a)

<u>Products</u>	<u>Jar size</u>	<u>Dimensions</u>	<u>Initial</u>	<u>Time at</u>		
			<u>temperature</u>	<u>240° F.</u>	<u>245° F.</u>	<u>250° F.</u>
			<u>Deg. F.</u>	<u>Min.</u>	<u>Min.</u>	<u>Min.</u>
Beans, Green	Junior	208x401	150	55	45	40
Beets	Junior	208x401	150	50	45	40
Carrots	Junior	208x401	150	55	50	45
Spinach	Junior	208x401	150	75	65	55

(a) For strained vegetables packed in Junior jars, see processes for "Vegetables, strained".

[fol. 806]

Vegetable juices: See Specialties

Vegetable salad or mixed vegetables: See Specialties

Vegetables, strained

Products	Jar size	Dimensions	Initial temperature	Time at	
			Deg. F.	240° F.	245° F.
				Min.	Min.
Beans, Green	Baby	200x309	140	45	40
Beets	Baby	200x309	140	45	40
Carrots	Baby	200x309	140	50	45
Peas	Baby	200x309	140	60	50
	Junior	208x401	140	80	65
Spinach	Baby	200x309	140	55	45
Squash	Baby	200x309	140	45	40
	Junior	208x401	140	55	50
Sweet Potatoes	Baby	200x309	140	45	40
	Junior	208x401	140	55	50

II.—RIPE OLIVES (a)

Whole, with or without pits, in brine

	Jar size	Dimensions	Time at
			240° F.
			Min.
303		303x411	70
2½		401x414	70

III.—SPECIALTIES

This is a group of products which vary widely from each other in composition and which from the standpoint of processing have little in common with the standard vegetables. They not only differ from each other, but each individual specialty as prepared in different plants is likely to vary in composition and in canning procedure from the same product prepared by another packer. Because of this difference in formula and the variation in preparation methods, specialties should not be packed without directions from a laboratory connected with the canning industry.

(a) For processing minced, crushed, chopped, sliced, or other olive products, a laboratory connected with the canning industry should be consulted, as the size of particles, tightness of pack, and moisture content must be considered before the process is suggested.

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IV.—MEAT OR MEAT PRODUCTS

Due to variations in formula and methods of preparation which may affect process relationships, these products should not be packed without directions from a laboratory connected with the canning industry.

V.—CHICKEN OR CHICKEN PRODUCTS

Due to variations in formula and methods of preparation which may affect process relationships, these products should not be packed without directions from a laboratory connected with the canning industry.

VI.—MARINE PRODUCTS

Due to variations in formula and methods of preparation which may affect process relationships, these products should not be packed without directions from a laboratory connected with the canning industry.

[fol. 808]

APPENDIX

PRECAUTIONS FOR HANDLING GLASS JARS

Glass containers can be damaged by excessive mechanical or thermal shocks. With modern high speed filling lines, particular attention should be directed toward eliminating:

1. Bruising jars by abrupt stops or careless handling.
2. Scuffing on conveyors or transfer points.
3. Excess thermal shock during filling, processing or cooling.

The damage done to filled containers by impacts usually is greater than that to empty containers because of the added weight of the contents.

The hermetic seal of the friction closures applied to the jars can be maintained by careful attention to:

1. Maximum filling temperature of product.
2. Adequate headspace in the glass jar.
3. Correct application of the closure.
4. Proper temperature of water during retort loading.
5. Ample counterpressure in retort during processing and particularly during cooling.
6. Proper heat distribution in the retort.
7. Provision for ample cooling after retorting.

GENERAL SOURCES AND CONTROL OF SPOILAGE CONTAMINATION

The efficiency of any process depends in large measure upon the type and number of microorganisms in the product at the time of canning. In general, the processes presented in this bulletin are regarded as adequate when something greater than an average number of spoilage organisms is present. They are not necessarily adequate in cases of extreme contamination by spoilage bacteria that may or may not be associated with insanitary conditions. Control of contamination by applying the strict principles of sanitation, and by other appropriate means, is a necessary adjunct to any process.

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Factory surveys during the past twenty years to determine the identity of contamination sources and to develop means for their elimination have shown that the important sources of contamination are within the canning plant. There are exceptions, notably in the case of asparagus, where soil contamination of the raw product may be a cause of spoilage. As soil bacteria brought into the plant may increase in number and lead to spoilage, the raw product, whenever its character permits, should be thoroughly washed in clean water.

Factory studies to date have centered chiefly upon the canning of asparagus, corn, peas, pumpkin, and spinach, but facts developed in these studies are applicable to other products. Accordingly, use of the following information should serve to control contamination to a degree that will ensure the effectiveness of the processes presented in this bulletin.

Wooden equipment

In general, the use of wood in canning equipment is not recommended, for bacteria may become seeded in the pores and once established may contaminate food materials to such an extent that spoilage may occur with a process that has been satisfactory for years. Any wooden equipment with which food materials may come in contact, such as brine and hot water tanks, conveyors, blanchers, canning tables and even such small items as paddles and rollers, may act as carriers of contamination. For example, wooden tanks used for storage of hot water for general plant purposes may contaminate a whole canning system. Wooden brine tanks, at the beginning of a day's run, may supply large numbers of organisms to the product being canned. Owing to dilution their number decreases markedly during steady operation, only to build up again during a shutdown. Wood, being porous, is able to retain bacteria and hold them mechanically immune from scrubbing and other cleaning processes. "Seeding" may be prevented to a considerable degree by constant cleaning, but in spite of all that may be done, there is at present no practical treatment which will rid wood of organisms that are established in it. Consequently, it has been recommended that tanks

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and other wooden equipment be replaced by those of hard surfaced construction.

Pumps, pipes, extractors, cyclones, etc.

Pumps, pipes, extractors, cyclones, etc., should be selected from the standpoint of ease in cleaning, because such equipment may hold food material that will serve as a medium for bacterial growth and permit the development of sufficient organisms to contaminate seriously the first part of the next day's pack. All such equipment should be thoroughly cleaned after being used, then thoroughly cooled with water and kept cool until next operated. It should likewise be flushed again with water immediately before it is used.


Care should be taken during the cleaning operation to blow steam through the perforations of steam distribution pipes which are submerged in food or brine during operation and to note that all perforations are open. Circulating "feeder" pipes should be thoroughly cleaned at the close of the day's pack. Preferably, they should be so constructed that they may be dismantled and cleaned with brushes. "Dead ends" should be eliminated wherever possible; if not, they should be provided with drains so that they may be thoroughly flushed. Pumps should be dismantled during the clean-up operation and only pumps adapted to daily cleaning should be used. Some persons should be delegated to inspect all cleaning operations to ensure that this work is efficiently done.

Fluming

Flumes, such as those used for conveying peas and whole grain corn, may become sources of bacterial contamination. In particular, the use of water at temperatures in the range of 100°F. to 180°F. should be avoided since this may provide a favorable condition for growth of thermophilic spoilage bacteria. It is advisable to use only fresh, clean, cold water for fluming purposes.

Fillers

Filling machines used with low-acid products have been found to be contaminated with spoilage bacteria. This con-



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tamination is usually the result of the filler being maintained at temperatures within the thermophilic growth range. This might occur during operation from contact with a heated product or during shut-down periods from leakage of steam supply valves.

Fillers should be dismantled and cleaned as frequently as practicable. After the day's clean-up, the fillers should be flushed with cold water with all machinery in motion to chill the equipment, and the fillers should be left clean, cold, and empty during the overnight shutdown. If the filler operates at temperatures within the thermophilic range during actual packing operations, it should be emptied of its product every 4 hours and thoroughly flushed with water with all machinery kept in motion.

Canning ingredients

In recent years there has been a growing appreciation of the importance, as carriers of spoilage contamination, of certain ingredients commonly used in canning. Among these are sugar, starch, flour, and dried milk. Of these, sugar and starch are most important and are further discussed on page 35.

SPECIFIC SOURCES OF SPOILAGE CONTAMINATION

In addition to the preceding general information on sources of contamination, canners of certain products upon which extensive investigations have been made will find of value the following additional information and suggestions.

Corn

PREHEATING SYSTEMS, MIXING AND BLENDING TANKS. The increasing use of mixing and blending equipment in which corn is handled while hot has demonstrated further need for contamination control. Such equipment while hot (180°F. or higher) does not permit the growth of spoilage bacteria, but in the range of 100°F. to 180°F. there is opportunity for development of thermophilic organisms. Usually this development occurs over night and during shutdowns, and the spores which develop during those times serve subsequently to contaminate

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the run. As a rule, it is best to hold the tanks empty over night. However, there appears to be no objection to holding them full of cold water provided care is taken to ensure that there are no leaky valves in the line which might tend to warm the equipment. Care should be taken during the cleaning operation to blow out perforated steam supply pipes; otherwise they may hold food material that will serve as a bacterial medium. Flushing and cooling may be accomplished conveniently by tapping a cold water line into the steam supply line adjacent to the mixer and blending tank.

CIRCULATING SYSTEMS. Such systems represent another step in complexity from the preheating systems. The circulating feeder pipes should be thoroughly cleaned at night and preferably they should be so constructed that they may be dismantled and cleaned with brushes.

WHOLE KERNEL CORN. With this product special care should be taken to prevent contact with wooden equipment and, after being cut, the corn should be subjected to an efficient wash. The use of warm water or hot water in flotation washers should be avoided since such practice may lead to the rapid development of spoilage bacteria. Failure to wash the cut corn properly may result in spoilage.

Peas

The recommendations made with respect to control of blancher contamination in the canning of peas apply also to other products, such as lima beans and green and wax beans, that are blanched in a conventional pea blancher.

BLANCHERS. Both rotary drum blanchers and tubular blancher systems may become contaminated with thermophilic spoilage bacteria. The contamination which occurs during shut-down periods can be minimized by prompt cooling of the blanchers after use, by thorough cleaning, elimination of steam leaks, and flushing of the blancher system before its next use. However, thermophilic contamination may also occur during operation of either type of blancher system.

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In rotary drum blanchers the contaminating bacteria are able to grow on the inner surfaces, above the water line, where temperatures are reduced by cool air drawn into the blanchers under loose-fitting doors and other openings. Any surface in the blancher where the temperature ranges between 100°F. and 180°F. can be the site of bacterial growth from which heat-resistant spores will be washed by condensate into the blanch water, and there contaminate the peas.

Efforts to prevent contamination in rotary drum blanchers should be directed toward elevating inner surface temperatures above 180°F. Blancher doors should be closed and fastened at all times. Doors which are bent or otherwise out of shape should be repaired in order to exclude as much cool air as possible. Vent stacks should be eliminated from the shell of the blancher. The coldest sections within a drum blancher are at the feed end. The use of a spray, inserted at the upper edge of the feed end, which delivers hot water (190°F. or higher) over the inside surfaces has been found useful in preventing contamination. During operation the temperature of the blanch water should be as high as practicable (at least 180°F.), and the reels should be kept in motion continuously while the blanchers are being heated or being held at operating temperature. A continuous overflow from the blancher should be maintained during operation.

The blancher water should be dumped as often as practicable since the number of bacterial spores in the water increases with time and use. The drain and water supply pipes should be of sufficient size to permit rapid draining and re-filling.

In tubular blanching systems a large percentage of the flat sour spore contamination occurs in the de-watering reel into which the peas are discharged from the blanchers. Thermophilic bacteria grow on the mesh of the screen and on the surfaces of the splash boards around the reel and the pan underneath. Spores produced by the bacteria are added to the peas as they pass through the reel or may be washed into the water and re-circulated in the blancher. This contamination can be reduced if sprays are installed to wash the surface

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of the reel with water which is preferably, but not necessarily, chlorinated. The use of cold water for this purpose is desirable to lower the temperature of the peas before they enter the quality grader. Sprays should also wash down the inner surfaces of the splash boards or canopy surrounding the reel. Tests have indicated that cold water is effective in reducing flat sour contamination when used in these sprays. The foam which accumulates on tanks supplying recovered water to tubular blanchers can be the growth site for thermophilic spoilage bacteria. A large, broad overflow should skim the surface of the tank. Top sprays delivering streams of water at a flat angle will help prevent the formation of foam and aid in skimming the tank.

It is important that peas be washed thoroughly after blanching. Adequate washing will remove large numbers of spoilage bacteria but cannot be depended upon to remove all of the bacteria added by a heavy contamination. Washing with cold water will reduce the temperature of the peas and thus help to minimize slime growth in subsequent equipment and prevent undesirable temperature increases in the quality grader brine.

Pumpkin

Practice in pumpkin canning is not standardized and the following suggestions are based upon a study of systems used by a majority of the pumpkin canners. Consideration of sources of contamination in pumpkin canning begins with the wilting equipment.

WOODEN BOX OR TOWER WILTERS. As already noted, wooden equipment is objectionable, but it may be lined with metal if this is practicable.

CONTINUOUS METAL OR WOODEN BOX WILTERS. Both metal and wooden boxes used as continuous wilters may be sources of contamination. They are difficult to clean and cool.

CONTINUOUS CONVEYOR PRESSES. There are various modifications in this type of equipment but the same principle is involved, that is, the pumpkin from the wilter is dropped into a

[fol. 815]

hopper and carried between two moving belts. The distance between the belts gradually decreases toward the outlet end, and the pressure that is exerted squeezes the juice from the pumpkin. These presses are complicated mechanically and the parts vary in temperature. Where the temperature is favorable to thermophilic growth there may be some bacterial development. Some measure of control may be exerted by spraying the press "apron" with cold water, but this expedient is not fully satisfactory. From the viewpoint of contamination control the screw type press is much to be preferred. In this equipment the pumpkin is "wormed" through a tapering perforated screen. During operation, the temperature of all parts is so high (180°F. to 200°F.) that no growth is possible. The screw press is readily accessible for cleaning.

CONCENTRATION OF PUMPKIN JUICE: It is usual to discard the juice from the press, but in some cases it is the practice to concentrate this juice and add it to the pumpkin at the finisher. This system is satisfactory when the general packing procedure is such as to keep contamination at a low level. However, the concentration of contamination is increased as the volume of juice is reduced by evaporation, and such contamination as may be present is returned to the product when the juice is not discarded.

Spinach

WASHERS: Spinach washers include "immersion," "spray-rotary" and "spray-belt" types. They are used singly, in multiple, and in various combinations. Their primary function is to remove grit and adhering soil and concurrently the soil-borne bacteria which are present. In all types of equipment, the washing efficiency is determined, at least in part, by the amount of water used. Thorough washing is of primary importance and a large volume of water is required. Washers should not be overloaded because this reduces their efficiency. When both immersion and spray types are used in the same line, better results are achieved if the immersion washer is placed before the spray washer. The first washing should always be done with cold water. The use of warm water in

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the first wash may lead to increase of bacteria that come from the field with the spinach, thus contaminating the equipment. Water should not be re-circulated where a single washer is used.

BLANCHERS: Blanching equipment may be a source of spoilage bacteria, particularly those of the thermophilic group. To minimize the hazards of spoilage from this source, the washing and cooling treatments previously discussed should be applied. Occasionally pea blanchers have been used, but as this type of equipment is difficult to clean there is opportunity for the development of spoilage organisms. Spoilage has been traced to such a blancher and its use is therefore not recommended. The blanch water should be renewed at a reasonably rapid rate.

SIGNIFICANCE OF SUGAR AND STARCH CONTAMINATION

Sugar, both beet and cane in dry or liquid form, may carry spores of all three groups of thermophilic bacteria that are important as spoilage agents in low-acid canned foods. The sugar industry is aware of this condition and has taken steps to control thermophilic contamination in its products. In 1931 the National Canners Association formulated and published bacterial standards for sugar as a basis for its judgment regarding the suitability of sugar to be used in canning low-acid products. These standards have been applied by control laboratories connected with the canning industry, by the sugar industry, by federal and state laboratories, etc. That part of the published statement referring to standards reads as follows:

TOTAL THERMOPHILIC SPORE COUNT: For the five samples examined, there shall be a maximum of not more than 150 spores and an average of not more than 125 spores per 10 grams of sugar.

FLAT SOUR SPORES: For the five samples examined, there shall be a maximum of not more than 75 spores and an average of not more than 50 spores per 10 grams of sugar.

THERMOPHILIC ANAEROBIC SPORES: These shall be present in not more than three of the five samples and in any one

[fol. 817]

sample to the extent of not more than four of six tubes inoculated by the standard procedure.

SULFIDE SPOILAGE SPORES: These shall be present in not more than two of the five samples and in any one sample to the extent of not more than five spores per 10 grams.

Sugar that is certified as suitable for use in the canning of low-acid products is produced by large manufacturers of both beet and cane sugar. It is recommended that canners of low-acid products specify that such sugar be provided, and it is suggested as an added safeguard that samples of delivery be submitted from time to time to a laboratory connected with the canning industry to determine whether deliveries conform to specifications. In collecting dry sugar samples, five individual $\frac{1}{2}$ lb. quantities should be taken from each of five bags or other containers of the shipment or lot in question. These samples should be sent to the laboratory in clean, sealed containers. If samples from more than one shipment or lot are submitted each container should be appropriately marked to distinguish the lot of its origin.

It is appreciated that the adequacy of this sampling will vary in relation to the size of the shipment or lot, but it is felt that where there is any significant variability in the shipment this fact will become evident in the majority of cases through individual tests on five samples.

For sampling liquid sugar, three individual samples of approximately 6 oz. each should be drawn from the tank or pumping line. The first sample should be taken at the beginning of the pumping operation, the second at the mid-point and the third near the end of the pumping. Each sample should be sealed and marked with its number and the designation of the lot of its origin.

The significance of starch contamination has also been demonstrated and starch to be used in the canning of low-acid products should be purchased on specification. The standards for sugar contamination apply also to starch and other cereal ingredients, and periodic laboratory checks are desirable.

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[fol. 819]

[illegible]

[fol. 820]

IMPORTANT POINTS FOR RETORT OPERATORS

1. Read carefully the entire introduction to NCA Bulletin 30-L.
2. Don't trust your memory on processes. Consult Bulletin 30-L.
3. Keep retort instruments and valves in good working order. Instruments need periodic testing.
4. Keep water level up to overflow and maintain water circulation throughout entire cook.
5. Don't start timing process until the thermometer shows the desired temperature.
6. Maintain the proper operating pressure throughout the entire processing cycle.
7. Timing the process is only part of the job. Keep the retort temperature correct.
8. Don't allow crates of jars to stand around before processing. Spoilage may result. See page 20.
9. Keep permanent time and temperature records of every retort load processed. See opposite page.
10. Cool jars properly. Too little cooling may cause either stackburn or spoilage; too much may cause rusting of caps.

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GOVERNMENT'S EXHIBIT 318

**NATIONAL CANNERS ASSOCIATION
RESEARCH LABORATORY**

PROCESSES FOR LOW-ACID CANNED FOODS IN METAL CONTAINERS

BULLETIN 26-L

Eighth Edition.



WASHINGTON, D. C.

December, 1955

[fol. 822]

IMPORTANT POINTS FOR CANNERS

1. Follow approved procedures. The procedures given in this bulletin are based on sound theory and wide practical experience. For safe processing it is important that they be carefully followed.
2. Keep your key men informed. Irregularities in cook room procedure, such as unprocessed cans getting into the warehouse, inadequate venting of retorts during coming-up period, and using a wrong process, will occur unless the cook room is properly supervised. Insist that all supervisory personnel and retort operators read this booklet and understand the significance of the tasks they perform.
3. Equip your retorts properly. Tested and properly installed retort instruments are essential. Instruments need periodic testing.
4. Don't reduce processes. Processes in this bulletin give the highest quality consistent with safety.
5. Code your cans. The time period during which each code lot is packed should be as short as practicable—in no case longer than one day.
6. Keep your factory clean. High bacterial contamination may lead to spoilage. See Appendix.

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PREVIOUS EDITIONS

First, January, 1930

Second, June, 1931

Third, June, 1937

Fourth, April, 1939

Fifth, May, 1942

Sixth, March, 1946

Seventh, June, 1950

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NATIONAL CANNERS ASSOCIATION

1955

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PROCESSES FOR LOW-ACID CANNED FOODS IN METAL CONTAINERS

INTRODUCTION

ON JANUARY 18, 1930, the Board of Directors of the National Canners Association approved for publication the processes suggested for various low-acid foods packed in metal containers. It was anticipated that further experimental work on processes for these foods, changes in the style of pack, and the advent of new products would necessitate revision of the publication at later dates. The first edition of the processing bulletin was published in January, 1930, and this is the eighth edition. The processes given in the present bulletin are based upon technological data relating to the heat resistance of spoilage bacteria in canned foods and upon data pertaining to heat penetration in canned foods.

In some instances process suggestions are based upon analogy with similar products for which heat resistance and heat penetration data are available, and also on the general experience of the canning industry.

It should be understood that when further data and information are available the bulletin will be revised, and previous editions should be discarded.

Prefacing the list of processes are recommendations with respect to proper retort equipment and its operation for best results. A thorough understanding of these recommendations is necessary for the best use of the bulletin and is essential for the correct interpretation and proper use of the processes.

Following the list of processes is an appendix which gives information regarding sources of spoilage contamination and its control; the significance of sugar and starch contamination; and Federal minimum drained weights for spinach and mushrooms for which maximum drained weights are specified in conjunction with process recommendations.

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While the procedures recommended in this bulletin are based on sound theory and wide practical experience, references to methods or types of equipment are not to be construed as a guarantee of their sufficiency. The recommendations contained herein are not to be considered as creating any assurance or warranty with respect to production or cost or any responsibility for damage, spoilage, loss, accident or injury resulting from the use of this information by anyone.

IMPORTANCE OF PROPER EQUIPMENT AND PROCEDURE

Close supervision of the cook room and careful attention to details are essential to ensure successful processing; otherwise, irregularities may occur due to poor organization of the cook room, to carelessness, or to ignorance of safe practices.

In order to be certain that all cans secure the amount of heat treatment required to prevent spoilage, careful control and recording of temperatures and adequate venting of air from all parts of the retort are essential, because processes for canned foods are determined by tests made with the cans in "pure" steam (free of air) at a definitely controlled and specified temperature, and when these processes are applied in commercial practice identical conditions must be met. The suggestions under "Equipment" and "Procedure" are based on the results of careful studies to determine what type of equipment and procedure may be relied upon to give the required heat treatment under commercial conditions.

EQUIPMENT

Type of Retort

The processes contained in this bulletin are for discontinuous, non-agitating (still) retorts. For other types of retorts, processes should be obtained from a laboratory connected with the canning industry. For retorts to be used in processing metal or glass containers under water with superimposed air pressure, see NCA Bulletin 30-L.

Retort Equipment

Control and indicating equipment such as thermometers and pressure gauges should be so placed with respect to light and position that they are easily readable.

For proper operation each retort should have the items of equipment named below:

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(1) *Controller.* An automatic controller to maintain accurately the temperature at the specified point.

(2) *Indicating Mercury-in-Glass Thermometer.* This thermometer should have a temperature range of not more than 100°F., for example, 170°F. to 270°F., and the scale divisions should be of either one degree or two degrees each—never greater than two degrees. The temperature scale of the indicating thermometer should be at least 7 inches in length, and the thermometer should have a pressure scale corresponding to the temperature scale at the altitude above sea level at which the retort is located. The relation between the temperature and pressure scales at various altitudes is given in the table on page 20. The pressure scales of all thermometers should be adjusted in correspondence with these data.

Bulbs of indicating thermometers may be installed within the retort shell or in external wells attached to the retort. External wells should communicate with the principal chamber of the retort through openings having an area not less than that of a circle of $\frac{3}{4}$ -inch diameter. All external wells or pipes must be equipped with at least $\frac{1}{16}$ -inch bleeders so located as to provide a full flow of steam past the entire length of the thermometer bulb. The bleeder should emit steam continuously and freely during the processing period. A suitable thermometer well is shown in the sketch. If containers are processed under water, the hemispherical well shown in Bulletin 30-L should be used.

(3) *Recording Thermometer.* The chart should be easily readable to 1°F. and should be graduated in not to exceed 2°F. divisions within the range of plus or minus 10°F. of the process holding temperature used. All charts should have a working scale of not less than 3 inches. The bulb may be installed within the retort shell or in a thermometer well attached to the shell. This well should be capable of accommodating both the recorder bulb and a mercury-in-glass thermometer.



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(4) *Pressure Gauge.* The pressure gauge should be graduated in 1-pound divisions, and have a range to 30 pounds. The minimum diameter of the dial should be $4\frac{1}{2}$ inches and the gauge should preferably be of a type in which the operating mechanism is independent of the case. Compound type gauges, having both vacuum and pressure scales, are advantageous. The gauge should be connected to the retort by means of a gauge siphon or goose neck.

(5) *Stacking Equipment.* Baskets, trays, gondolas, etc., for holding stacked cans should preferably be of strap-iron. Solid or insufficiently perforated metal trays, dividers, crates, or gondolas should not be used, for such equipment can lead to the formation of low temperature regions. When perforated metal baskets are used the perforations in the bottoms should be at least 1 inch holes on $1\frac{3}{4}$ inch centers, or their equivalent ($\frac{1}{2}$ inch on 1 inch centers, $\frac{3}{4}$ inch on $1\frac{1}{2}$ inch centers, $1\frac{1}{2}$ inch on $2\frac{1}{2}$ inch centers, or $1\frac{3}{4}$ inch on 3 inch centers).

(6) *Stacking of Cans.* Cans should be so stacked as to permit the free circulation of steam throughout the retort load. If it is necessary to separate two lots in one crate or tray, fish net or onion sacks of $\frac{1}{2}$ inch, or larger, mesh should be used rather than burlap or other tightly woven material.

(7) *Valve-Controlled Vents.* Vents are large valve-controlled openings into retorts used for elimination of air during the come-up period. They should be installed in such a way that all the air can be removed from the retort before timing of the process is started. Vents should be controlled by gate, or plug-cock type valves which should be fully open to permit rapid discharge of air from the retort during the coming-up period. The vents and all external lines, manifolds, etc. should be short and as free as possible from bends and other conditions which might retard rapid discharge of air. The outlet pipes should be located in the extreme opposite wall of the retort from that through which the steam is admitted.

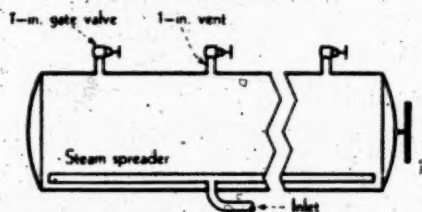
No single venting specification is entirely applicable to all retorts, because the choice of a satisfactory specification is dependent upon size, shape, and present equipment of retorts, as well as upon quantity and pressure of steam available,

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method of stacking cans in the retort, length of coming-up time desired, resistance to outward flow of air from the retort, etc.

Six suggested installations and operating procedures are given in the following diagrams. *Increased venting may be necessary when systems employing divider plates between each layer of cans are used. Where such systems are used, consult a laboratory connected with the canning industry.*

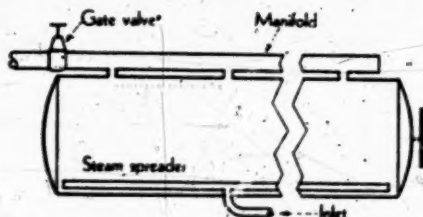
A—Venting through multiple 1-in. vents discharging directly to atmosphere



Specifications: One 1-in. vent for every 5 ft. of retort length, equipped with a gate valve and discharging to atmosphere; end vents not more than $2\frac{1}{2}$ ft. from ends of retort.

Venting method: Valve should be wide open for at least 5 minutes to at least 225°F. , or for at least 7 minutes to at least 220°F.

B—Venting through multiple 1-in. vents discharging through a manifold to atmosphere



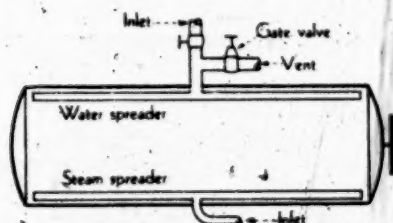
Specifications: One 1-in. vent for every 5 ft. of retort length; end vents not over $2\frac{1}{2}$ ft. from ends of retort;

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size of manifold—for retorts less than 15 ft. in length, 2½-in.; for retorts over 15 ft. in length, 3-in.

Venting method: Manifold vent valve should be wide open for at least 6 minutes to at least 225°F., or for at least 8 minutes to at least 220°F.

C—Venting through water spreaders



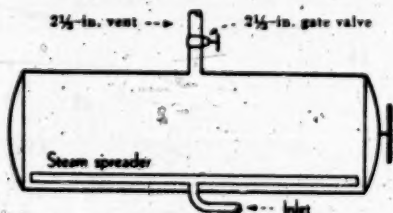
Size of water inlet, vent pipe, and vent valve: For retorts less than 15 ft. in length, 2-in.; for retorts over 15 ft. in length, 2½-in.

Size of water spreader: For retorts less than 15 ft. in length, 1½-in.; for retorts over 15 ft. in length, 2-in.

Number of holes in water spreader: This is an important consideration, and may be governed by local regulations; if not, a laboratory connected with the canning industry should be consulted.

Venting method: Water spreader vent valve should be wide open for at least 5 minutes to at least 225°F., or, for at least 7 minutes to at least 220°F.

D—Venting through a single 2½-in. top vent (for retorts not exceeding 15 ft. in length)



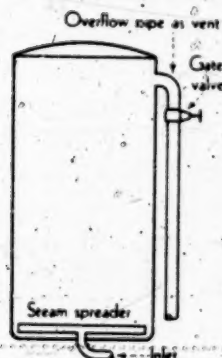
Specifications: A 2½-in. vent equipped with a 2½-

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in. gate valve and within 2 ft. of the center of the retort.

Venting method: Valve should be wide open for at least 4 minutes to at least 220°F.

E—Venting through a 1½-in. overflow



Specifications: A 1½-in. overflow pipe equipped with a 1½-in. gate valve and with not more than 6 ft. of 1½-in. pipe beyond the valve.

Venting method: Valve should be wide open for at least 4 minutes to at least 218°F., or for at least 5 minutes to at least 215°F.

F—Venting through a single 1-in. top vent



Specifications: A 1-in. vent in lid, equipped with a 1-in. gate valve and discharging directly into the atmosphere.

Venting method: Valve should be wide open for at least 5 minutes to at least 230°F., or for at least 7 minutes to at least 220°F.

(6) *Bleeders.* Besides the thermometer bleeders, additional bleeders are necessary, located in the extreme opposite wall of the retort from that at which steam is admitted. These bleeders should be of 1/8-inch size. A horizontal retort should have one

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bleeder within 12 inches of each end and additional bleeders not more than 8 feet apart. A vertical retort should have one bleeder at the end opposite to that at which steam is admitted. Bleeders should be open and emit steam continuously and freely during the entire process, including the coming-up time. All bleeders should be arranged in such a way that the operator can observe that steam is escaping during the process.

(7) *Drain Valve.* There should be a drain valve of adequate size to permit the rapid removal of water after cooling. Under some operating conditions the drain valve may be used as a vent.

(8) *Steam Line.* The steam line should lead to a perforated pipe within the retort. The pipe should be so perforated as to ensure proper distribution of steam during the processing period. With horizontal retorts the perforated pipe should extend along the bottom for the entire length of the retort and the perforations should be along the top of this pipe. In vertical retorts the perforated pipe is usually in the form of a cross with the perforations along the top or sides of the pipe.

(9) *By-Pass.* A steam by-pass for the control valve is desirable to make possible hand operation of the retort in the event of a breakdown of the control valve, and also to admit steam rapidly during the coming-up period when steam is usually demanded in larger quantities than the control valve is capable of handling. This steam by-pass should be at least equal in diameter to the pipe bringing the steam to the retort.

(10) *Safety Valve.* Safety valves of adequate capacity are necessary to prevent excess pressure in retorts. These should comply with local safety codes or the A.S.M.E. code for unfired pressure vessels. For details regarding the A.S.M.E. code, see "Accident Prevention Manual for Industrial Operations", Section 4 Pressure Vessels, published by the National Safety Council Inc., 425 North Michigan Avenue, Chicago 11, Illinois. Section 4 may be obtained as a separate reprint.

Pressure-Cooling Equipment.

If the cans are to be cooled under pressure, equipment in addition to that described above will be necessary. For information in regard to such equipment or in regard to the oper-

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ation of retorts, a laboratory connected with the canning industry should be consulted.

Maintenance of Equipment

Processing equipment should be maintained in a satisfactory operating condition. Safety valves should be tested frequently. Instruments (gauges, thermometers, recorders) should be checked for accuracy at least once a year. Water valves and compressed air valves, especially the latter, should be checked frequently for leaks.

Before each operating season and after any considerable idle period, the entire retort hook-up should be examined carefully, and each retort should be brought to processing temperature (without a load) to test the steam line for leaks, to check the vents, and to test the instruments and control equipment for proper operation and accurate recording. Never introduce water into an empty retort after testing until the pressure has been released.

PROCEDURE

All cans should be so closed and processed that the ends will remain concave under all commercial storage conditions regardless of temperature and altitude. To satisfy such conditions, commercial experience has indicated that with products packed in brine without steam flow or mechanical vacuum closure, the average temperature (temperature of the contents of the can after thorough mixing) of the contents of each can at the time of closure should be at least 130°F. Cans of large diameter may require a much higher closing temperature to prevent distortion of the ends during processing. For many products a higher vacuum than that obtained from having an average closing temperature of 130°F. will be necessary in order to maintain the canned product in good condition.

Acidification

Unless some acidification procedure is followed, sterilization of certain low-acid foods by heat produces unmerchantable

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products. Notable examples are Globe artichokes, onions and green peppers. A health hazard is involved in the case of insufficient acidification. Under proper control such products may be acidified to the point where they are no longer low-acid and then be processed in boiling water. However, this procedure should not be followed without consulting a laboratory connected with the canning industry. Experience has shown that careful supervision of all details, particularly the blanch, fill and brine, is essential when acidification is included in the processing procedure.

Coding

All containers should be coded by marks to identify the time of packing. The time period during which each code lot is packed should be as short as practicable—in no case longer than one day. Strict adherence to this rule has proved to be good economy.

Process

The term "process" as used in this bulletin designates the heat treatment expressed in terms of temperature and time given the product after the container is permanently sealed. The basic, or minimum, requirement for the process for any product is that it be sufficient to destroy the organism of greatest known resistance to heat which, by reason of its survival, may be detrimental to health.

The efficiency of any process is dependent on the heat resistance and the number of bacteria in the product. In general, the processes presented in this bulletin are regarded as adequate when something greater than a minimum number of spoilage organisms is present. In some cases contamination with spoilage bacteria may be so high and the bacteria of such great resistance to heat that the suggested process may be inadequate to prevent spoilage, and it is therefore essential that such contamination be kept as low as possible. (See Appendix for information regarding precautions which should be taken to keep the number of spoilage organisms at a minimum.)

Operation of Cook Room

In order to minimize the possibility of mistakes and reduce

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the danger of unprocessed or underprocessed cans reaching the warehouse, it is recommended that:

- (1) Processes for all products being packed be posted in a conspicuous place near the retorts.
- (2) All baskets, trucks, cars or crates containing un-retorted material be plainly and conspicuously marked. If several products are being packed at the same time, each product should also be plainly indicated.
- (3) A distinctive marker be hung from the retort opening when the retort holds unprocessed cans. It should be so placed that the door or lid cannot be closed before the marker is removed.
- (4) A retort not be closed until the operator indicates that he is ready to start the process.
- (5) Cans of unknown status with regard to process and found on the cook room floor be picked up periodically, purged and thrown out.
- (6) Adequate precautions be taken to clear exhaust boxes and precookers of all cans at the end of each day's operations.

Rapid Handling and Prompt Retorting of Filled Cans

A long holding period between filling and closing or between closing and retorting cans may result in souring, off-flavor, and loss of vacuum. Depending upon the nature of the product, processing should follow within one-half to one hour after closure. If longer times are required to obtain enough cans to fill a retort, processing of partial retort loads should be practiced.

Position of Cans in Retort

Heat penetration in canned foods containing freely flowing liquid is mainly by convection currents. The general trend of these currents is in a vertical direction, consequently in the product being heated they seek channels which permit such motion. Where their progress is impeded or baffled by solid material, the currents flow around the obstruction to the nearest point at which they can pass. For this reason the alignment of certain foods in the can is of the greatest importance as regards heat penetration.

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Where the packing or filling of any product in the can results in stratification, the cans should be processed in such position that the plane of stratification is vertical. In the case of asparagus, for example, the spears are generally parallel and tightly packed in the cans in a vertical position, so that the channels containing liquid are parallel to the spears. As a result, the speed of heat penetration is greater when the cans are placed upright in the retort.

Another example is spinach. In No. 10 cans especially, the spinach is placed in more or less horizontal layers. Convection currents, therefore, travel to the center of the cans faster when the cans are processed on their sides than when in a vertical position.

Products such as peas and cut green beans consist of small solid bodies, fairly uniform in size and evenly distributed throughout a liquid medium; consequently the rate of heat penetration is little influenced by the position of the cans in the retort.

Initial Temperature

The term "initial temperature" as used herein designates the average temperature of the can contents at the time steam is turned on for the process. Just prior to the start of the process, the contents of the container used for checking the initial temperature should be shaken or stirred and the temperature determined. This container should be representative of the coldest cans in the retort load and should have an initial temperature equal to or greater than the initial temperature specified in this bulletin. The specified initial temperature is to be regarded as a prerequisite minimum of the process suggested. If a can is closed at a temperature higher than that of the canning room atmosphere and is then held for some time in the room before it is processed, the contents will cool but the temperature at the center of the can may not be appreciably less than the closing temperature. It is for this reason that, from the standpoint of sterilization, the contents of the container should be stirred or shaken and the initial average temperature determined just prior to the start of the process.

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"Initial temperature" should not be confused with "closing temperature". Except when vacuum packing or steam flow closure is practiced, the closing temperature is the major factor influencing the final vacuum obtained in the cans and is an important consideration in preventing undue can strain or damage during processing and cooling and in avoiding development of flippers. The closing temperature must be sufficiently high to satisfy these needs, and this will, in many instances, result in initial temperatures considerably above the minimum specified as a prerequisite to the processes listed.

Starting a Process—Venting—Coming-up Time

At the time the steam is turned on, all bleeders and all valve-controlled vents should be wide open. All bleeders should be left open during the processing period.

Venting. The valve-controlled vents should be left open for a sufficient time after steam is turned on to ensure that all air is swept out of the retort, so that no "pockets" of air remain among the cans. There is a tendency for steam to by-pass the load of cans and to escape through the vents before all air has been driven from the stacks of cans. On page 8 are the venting specifications designed to provide for satisfactory operations.

An air-steam mixture in the retort will cause a non-uniform heat distribution, resulting in a lowering of the rate of heat transfer to the containers. The timing of the process should not begin, even though the proper temperature is indicated, until temperature and pressure instruments on the retort give corresponding readings (see table on page 20).

Lack of agreement between temperature and pressure instruments is an indication of the presence of air in the retort. However, if proper venting procedure is not followed, there can be a "pocket" containing air in a region of the retort that is remote from the thermometer, and the presence of this "air pocket" may not be indicated by a detectable disagreement between the temperature and pressure indicators.

Coming-up Time. There is a minimum limit for the coming-up time because of the necessity for removing the air from the retort by venting during this period. When venting is inadequate for rapid removal of the air, the use of a very short

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coming-up time is likely to result in an unsterilized product. A coming-up time shorter than the minimum for which the retort has been demonstrated to give satisfactory results with its existing hook-up and specified operating technique should not be used.

With some vacuum-packed products, it is advisable to heat the cans sufficiently to dissipate the internal vacuum before the pressure in the retort is permitted to become greater than two pounds, otherwise the cans may panel or even collapse.

Process Temperatures

The quality of most products will be least affected by the process if the retorts are brought to processing temperature quickly and the process is followed by prompt and rapid cooling. (Some vacuum-packed products are an exception, for the reason given above.) This procedure not only protects the quality of the product but also shortens the total time required for each processing cycle and so effects time economy in the use of the retorts. It applies to all processing temperatures and is especially important when the temperature is above 240°F.

If any deviation from the processes given in this bulletin is desired, a laboratory connected with the canning industry should be consulted.

Short High Temperature Processes. For a product having rapid heat penetration, very short processes at comparatively high temperatures are sometimes used. It is especially important that such processes have the most careful control. An error in either time or temperature in a short high temperature process will have a much greater effect upon the total sterilizing value of the process than a like error will have in a longer process at a lower temperature.

Boiling Water Processes. The sterilizing of low-acid products in boiling water is impracticable without controlled acidification procedures. Without acidification continuous boiling for over ten hours is necessary to secure a sterilizing efficiency equivalent to that of the processes listed in this bulletin.

Cooling and Storage

The duration of the water-cooling period should be sufficient to bring the average temperature of the contents to 100°F., but

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water cooling should not be continued to the point where external rusting of the container may occur. In humid locations water cooling to a temperature of 100°F. may lead to external rusting. In that case, water cooling should be carried to approximately 120°F. and the cans subsequently air cooled before they are put into storage. When cans whose contents are at temperatures substantially above 100°F. are stacked closely together, and especially if they are sealed in fiber cases, they cool so slowly that spoilage by thermophilic bacteria and injury by heat to the quality of the product (stack-burn) may occur.

Air Cooling

If the capacity of the water-cooling equipment is inadequate, or if a shortage of water is experienced, the cans should be so stacked that they will air cool rapidly. Air cooling is sometimes used for products such as hominy in order to effect a proper swelling of the product. It is suggested that the cans be stacked on their sides in single rows, allowing space for air circulation between the rows. The stacks should be arranged parallel to the cross ventilation of the warehouse. Careful attention to the factors affecting air circulation may serve to prevent retarded cooling and to safeguard against spoilage by thermophilic bacteria.

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Corresponding Gauge Pressures and Process Temperatures

The following table shows the gauge pressure corresponding to specified process temperatures at various altitudes:

GAUGE PRESSURE CORRESPONDING TO SPECIFIED PROCESS
TEMPERATURES AT VARIOUS ALTITUDES

Temp. Deg. F.	Sea Level	Feet above sea level							Temp. Deg. C
		500	1000	2000	3000	*4000	5000	6000	
200	.....	.....	.....	.....	.....	.....	.....	.....	93.3
205	.....	.....	.....	.....	.....	.....	0.5	0.9	96.1
210	.....	.....	.....	0.4	0.9	1.4	1.8	2.3	98.9
212	0.0	0.2	0.5	1.0	1.5	2.0	2.4	2.9	100.0
215	0.9	1.1	1.4	1.9	2.4	2.9	3.3	3.8	101.7
220	2.5	2.7	3.0	3.4	3.9	4.3	4.9	5.3	104.4
225	4.2	4.5	4.7	5.2	5.7	6.2	6.6	7.1	107.2
230	6.1	6.3	6.6	7.1	7.6	8.0	8.5	9.0	110.0
235	8.1	8.3	8.6	9.1	9.6	10.0	10.5	11.0	112.8
240	10.3	10.5	10.8	11.3	11.7	12.2	12.7	13.1	115.6
242	11.2	11.4	11.7	12.2	12.7	13.1	13.6	14.1	116.7
245	12.6	12.9	13.1	13.6	14.1	14.6	15.0	15.5	118.3
248	14.1	14.3	14.6	15.1	15.6	16.0	16.5	17.0	120.0
250	15.1	15.4	15.6	16.1	16.6	17.1	17.5	18.0	121.1
252	16.2	16.4	16.7	17.2	17.7	18.1	18.6	19.1	122.2
255	17.8	18.1	18.3	18.8	19.3	19.8	20.2	20.7	123.9
260	20.7	21.0	21.2	21.7	22.2	22.7	23.1	23.6	126.7

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CAUTION

To facilitate the presentation of the process times and temperatures in tabular form, it has been necessary to use a number of footnotes. Those who use the bulletin are cautioned to read the footnotes in connection with the tables to which they refer.

CAN DIMENSIONS

The can sizes are given in the nomenclature usually employed in the industry, which avoids the confusion incident to conflicting local names of cans.

In this system the cans are identified by a statement of their dimensions (over-all diameter and over-all height). Each dimension is expressed as a number of three digits. The left-hand digit gives the number of whole inches, while the two right-hand digits give the additional fraction of the dimension expressed as sixteenths of an inch.

The first number given in the size of a can is the diameter, and the second number is the height. For example, a No. 2 can, designated as 307x409, is $3\frac{7}{16}$ inches in diameter and $4\frac{9}{16}$ inches high, that is, within manufacturing tolerances.

The dimensions are "over-all," the diameter being measured to the outside of the double seam, and the length including the entire seam at each end of the can.

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PROCESS TABLES

I.—VEGETABLES AND VEGETABLE PRODUCTS

Artichokes, Globe

Pressure cooks adequate for sterilization render artichokes and artichoke hearts unmerchantable. The Standard of Identity promulgated under the Food, Drug and Cosmetic Act recognizes the necessity of acidifying artichokes. Such acidification permits safe processing in boiling water and thereby ensures preservation without loss of merchantability. Careful supervision of all details, particularly blanch, fill, and brine, is essential when acidification is included in the processing procedure. These products should not be packed without consulting a laboratory connected with the canning industry.

Asparagus spears, white and white-green

Can Name	Dimensions	Initial temperature Deg. F.	Time at (a) 240° F.	
			Min.	Min.
No. 2½ & smaller	401x411 & smaller	70	Tips Down	
		120	25	16
No. 2½ & smaller	401x411 & smaller	70	Tips Up	
		120	23	14
No. 2½ & smaller	401x411 & smaller	70	Tips Down	
		120	27	19
No. 2½ & smaller	401x411 & smaller	70	Tips Up	
		120	26	18

(a) Two series of processing times are shown in the last two columns headed tips down and tips up. These headings refer to the position of the spears in the retort during processing. Processing the cans in a vertical position is very important.

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Asparagus spears, all green

Can Name	Dimensions	Initial temperature Deg. F.	Time at (a)	
			240° F. Min.	248° F. Min.
Tips Down				
No. 2½ & smaller	401x411	70	27	17
	& smaller	120	25	15
Tips Up				
No. 2½ & smaller	401x411	70	27	19
	& smaller	120	26	18

Asparagus cuts, white or green, including soup cuts

Can Name	Dimensions	Initial temperature Deg. F.	Time at	
			240° F. Min.	248° F. Min.
No. 2½ & smaller	401x411 & smaller	70	26	16
		120	25	15
No. 10	603x700	70	32	20
		120	30	18

(a) Two series of processing times are shown in the last two columns headed tips down and tips up. These headings refer to the position of the spears in the retort during processing. Processing the cans in a vertical position is very important.

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Baby food, chopped: See Vegetables, chopped

Baby food, strained: See Vegetables, strained

Beans, green or wax, whole or cut (a)

Can Name	Dimensions	Initial temperature		Time at 245° F.	
		Deg. F.	Min.	Min.	Min.
No. 2 & smaller	307x409 & smaller	70	21	16	12
		120	20	15	11
No. 2½	401x411	70	26	19	15
		120	25	18	14
No. 3 Cylinder	404x700	70	32	22	18
		120	30	20	16
No. 10	603x700	70	37	27	22
		120	35	25	20

Beans, green or wax, asparagus style (a) (b)

Can Name	Dimensions	Initial temperature		Time at 240° F.	
		Deg. F.	Min.	Min.	Min.
No. 2 & smaller	307x409 & smaller	70	26		
		120	25		
No. 10	603x700	70	50		
		120	45		

Beans, green or wax, Sliced Lengthwise or French style (a)

Can Name	Dimensions	Initial temperature		Maximum drained weight
		Deg. F.	Min.	
No. 2	307x409	70	26	14
		120	25	
No. 10	603x700	70	50	70
		120	45	

Beans, Kidney: See Beans, mature, etc.

(a) These processes apply only to beans that are properly blanched.

(b) All cans of asparagus style beans should be processed in a position such that the beans are upright in the retort.

[fol. 846]

Beans, Lima, succulent (a)

Can Name	Dimen- sions	Initial temper- ature	240° F.		Time at 245° F.		250° F.	
		Deg. F.	Min.		Min.		Min.	
No. 2 & smaller	307x409 & smaller	70	40		27		20	
		140	35		25		18	
No. 3 Cylinder	404x700	70	55		38		28	
		140	50		35		25	
No. 10	603x700	70	60		45		35	
		140	55		40		30	

Beans, mature, and soaked dried legumes, shelled types, in brine

Can Name	Dimen- sions	Initial temper- ature	240° F.		Time at 245° F.		250° F.	
		Deg. F.	Min.		Min.		Min.	
No. 2½ & smaller	401x411 & smaller	100-140	45		30		20	
No. 10	603x700	100-140	70		55		40	

Beans, Soy

Can Name	Dimen- sions	Initial temper- ature	240° F.		Time at 245° F.		250° F.	
		Deg. F.	Min.		Min.		Min.	
No. 2 & smaller	307 409 & smaller	70	45		27		20	
		140	40		25		18	
No. 10	603x700	70	70		55		40	
		140	65		50		35	

(a) For "lima beans, dry soaked" the processes given under "Beans, mature, etc." should be used.

[fol. 847]

Beans in Sauce

The process necessary for the sterilization of beans in sauce depends to a considerable extent upon the sauce formulation with respect to tomato pulp and starch content. The processes in the three tables which follow are designed to fit three ranges of sauce formulation. If the formulation used does not fall within the specified limits of ingredients, the proper process should be obtained from a laboratory connected with the canning industry.

Beans in Heavy Sauce, with or without pork, or baked beans

Can Name	Dimensions	Initial temperature	240° F.		Time at 245° F.		250° F.
		Deg. F.	Min.		Min.		Min.
No. 1 (Picnic)	211x400	100	75		65		55
		140	70		60		50
		180	60		50		45
Kitchenette	307x214	100	80		70		65
		140	75		65		60
		180	65		55		50
No. 300	300x407	100	90		80		70
		140	80		70		60
		180	70		60		50
No. 303	303x406	100	95		85		75
		140	85		75		65
		180	75		65		55
No. 303 Cylinder	303x509	100	100		90		80
No. 95	307x400	140	90		80		70
		180	75		70		60
No. 2	307x409	100	105		95		85
		140	95		85		75
		180	80		70		65
Jumbo	307x510	100	105		100		90
No. 2 Cylinder	307x512	140	95		90		80
		180	80		75		65
No. 2½	401x411	100	130		115		110
		140	115		100		95
		180	95		85		80
No. 10	603x700	100	235		215		200
		160	210		190		175

[fol. 848]

Beans, with or without pork, in tomato sauce containing no added starch and 10 to 20 gallons of tomato pulp (1.045 sp. gr.) per 100 gallons sauce.

Can Name	Dimensions	Initial temperature	Time at		
		Deg. F.	240° F. Min.	245° F. Min.	250° F. Min.
No. 2½ & smaller	401x411 & smaller	100-140	65	45	35
No. 10	603x700	100-140	100	75	55

Beans, with or without pork, in tomato sauce containing no added starch and 10 gallons or less of tomato pulp (1.045 sp. gr.) per 100 gallons sauce

Can Name	Dimensions	Initial temperature	340° F.	Time at 245° F.	250° F.
		Deg. F.	Min.	Min.	Min.
No. 2½ & smaller	401x411 & smaller	100-140	45	30	20
No. 10	603x700	100-140	70	55	40

Bean sprouts

Can Name	Dimensions	Initial temperature	Time at	
		Deg. F.	240° F. Min.	250° F. Min.
No. 2½ & smaller	401x411 & smaller	70 140	21 20	12 11

Beets, whole, cut, quartered, diced, sliced, or shoestring, in brine (a)

Can Name	Dimensions	Initial temperature	Time at	
		Deg. F.	240° F. Min.	250° F. Min.
No. 2½ & smaller	401x411 & smaller	70 140	35 30	23 20
No. 10 (except sliced)	603x700	70 140	45 40	30 25
No. 10 (sliced)	603x700	70 140	50 45	35 30

(a) If beets are lye-peeled, the cooks apply only provided the lye has been completely removed by washing.

[fol. 849]

Beet tops: See Spinach
Broccoli, green sprouting (a)

Can Name	Dimensions	Initial temperature	
		Deg. F.	Time at 240° F. Min.
Jumbo.....	307x510	70	35
No. 2 Cylinder.....	307x512	140	30

Cabbage, in sections (b)

Can Name	Dimensions	Initial temperature		
		Deg. F.	Time at 240° F. Min.	Time at 250° F. Min.
No. 2½.....	401x411	70	45	30
		140	40	25

**Carrots, whole, cut, quartered, sliced, diced or shoestring,
in brine (c)**

Can Name	Dimensions	Initial temperature		
		Deg. F.	Time at 240° F. Min.	Time at 250° F. Min.
No. 2½ & smaller.....	401x411	70	35	23
	& smaller	140	30	20
No. 10 (except sliced).....	603x700	70	45	30
		140	40	25
No. 10 (sliced).....	603x700	70	50	35
		140	45	30

Carrots and Peas: See Peas and Carrots.

Carrot Juice: See Specialties

Cauliflower

Can Name	Dimensions	Initial temperature	
		Deg. F.	Time at 240° F. Min.
No. 2½ & smaller.....	401x411	70	21
	& smaller	140	20

(a) All cans of broccoli should be processed in a position such that the sprouts are upright in the retort.

(b) The weight of cabbage filled into No. 2½ cans should not exceed 17 ounces. These processes should not be applied to other styles of pack because variation in canning procedure may vary the heat penetration. Where it is desired to can cabbage in other styles, a laboratory connected with the canning industry should be consulted.

(c) Other styles of carrots, including carrot chips, should not be packed without directions from a laboratory connected with the canning industry. If carrots are lye-peeled, the cooks apply only provided the lye has been completely removed by washing. If carrots are packed "asparagus style," the cans should be processed on end.

[fol. 850]

Celery Cuts

Can Name	Dimensions	Initial temperature	Time at 240° F.
		Deg. F.	Min.
No. 2 & smaller	307x409 & smaller	70	28
		140	25
No. 2½	401x411	70	33
		140	30
No. 10	603x700	70	45
		140	40

Celery hearts (a)

Can Name	Dimensions	Initial temperature	Time at 240° F.
		Deg. F.	Min.
Quart Olive & smaller	307x704 & smaller	70	28
		140	25
No. 2½	401x411	70	33
		140	30

Corn, cream style, or Succotash (b)

Can Name	Dimensions	Initial temperature	Time at		
		Deg. F.	240° F.	245° F.	250° F.
8Z Tall	211x304	140	75	65	55
		160	70	60	50
		180	65	55	45
No. 1 (Picnic)	211x400	140	80	70	60
		160	75	65	55
		180	70	60	50
No. 303	303x406	140	95	85	75
		160	90	80	70
		180	85	75	65
No. 2	307x409	140	105	95	85
		160	100	90	80
		180	90	80	70
No. 3 Cylinder	401x700	140	160	145	130
		160	150	135	120
		180	135	120	105
No. 10	603x700	140	220	205	195
		160	205	190	180
		180	180	165	155

(a) Cans of celery packed "asparagus style" should be processed in a position such that the celery is upright in the retort.

(b) These processes apply to succotash prepared from cream style corn and beans. For succotash prepared from whole kernel corn and beans use the processes suggested for whole kernel corn in brine.

[fol. 851]

Corn, whole kernel in brine (a)

Can Name	Dimensions	Initial temperature	240° F.		Time at 245° F.	
		Deg. F	Min.		Min.	
No. 2 & smaller	307x409 & smaller	100	55		40	30
		140	50		35	25
No. 3 cylinder	404x700	140	65		45	35
No. 10	603x700	140	85		60	45
		160	80		55	40

Corn, whole kernel, vacuum pack (b)

Can Name	Dimensions	Initial temperature	240° F.		Time at 245° F.	
		Deg. F	Min.		Min.	
No. 2 Vacuum	307x306	70-160	55		45	35

Corn on the cob

Processes necessary for vacuum packed corn on the cob are dependent to a marked degree upon the factors of maturity, variety, fill, amount of water added, and conditions tending to reduce the vacuum. It should not be packed without directions from a laboratory connected with the canning industry.

Dandelion greens: See Spinach

Hominy, lye or pearl

Can Name	Dimensions	Initial temperature	Time at 240° F.	
		Deg. F	Min.	
No. 2	307x409	70-160	75	
No. 2 1/2	401x411	70-160	90	
No. 10	603x700	70-160	120	

(a) These processes apply only if the corn is well cleaned.

(b) The processes given above are dependent on the following factors for maintenance of their intended sterilizing value: (1) The maintenance of 23 inches of can vacuum immediately before processing; (2) the presence of at least one ounce of free liquid; (3) the control of fill-in weight not to exceed 11 1/4 ounces of washed corn.

[fol. 852]

Kale: See Spinach**Mushrooms, buttons, whole, sliced or pieces and stems,
in brine (a)**

Can Name	Dimen- sions	Initial temper- ature		Maximum drained weight (b)
		Deg. F.	Time at 250° F. Min.	Oz.
2Z Mushroom.....	202x204	70-140	18	2.3
4Z Mushroom.....	211x212			4.5
8Z Mushroom.....	300x400			8.5
Jumbo.....	307x510	70-140	25	16.5
No. 10.....	603x700	70-140	30	70

Mustard greens: See Spinach**Okra, Northern style (fermented)**

Can Name	Dimen- sions	Initial temper- ature		Time at 240° F.
		Deg. F.	Min.	Min.
No. 2 & smaller.....	307x409 & smaller	140	70	20
			140	17
No. 2½.....	401x411	140	70	23
			140	20
No. 10.....	603x700	140	70	40
			140	35

Okra, Southern style (unfermented)

Can Name	Dimen- sions	Initial temper- ature Deg. F.	Time at		Maximum fill-in weight Oz.
			240° F. Min.	250° F. Min.	
No. 1 (Picnic).....	211x400	70	35	25	6.6
		140	30	20	
No. 2.....	307x409	70	35	25	12.3
		140	30	20	
No. 2½.....	401x411	70	40	30	18
		140	35	25	
No. 10.....	603x700	70	55	45	66
		140	45	35	

(a) These processes do not apply to mushroom "chips." For styles of pack other than those listed, consult a laboratory connected with the canning industry.

(b) For the minimum drained weights contained in the Standard for Fill of Container promulgated under the Federal Food, Drug and Cosmetic Act, see page 55.

[fol. 853]

Onions

Pressure cooks adequate for sterilization render onions unmerchantable. It has been found necessary, therefore, to acidify this product to permit safe processing in boiling water and thereby ensure preservation without loss of merchantability. Careful supervision of all details, particularly blanch, fill and brine is essential when acidification is included in the processing procedure. This product should not be packed without consulting a laboratory connected with the canning industry.

Parsnips (a)

Can Name	Dimensions	Initial temperature	
		Deg. F.	Time at 240° F. Min.
No. 2½ & smaller	401x411 & smaller	70	33
		140	30
No. 10	603x700	70	45
		140	40

Peas, in brine (b)

Can Name	Dimensions	Initial temperature		Time at 245° F.	
		Deg. F.	240° F. Min.	245° F. Min.	250° F. Min.
No. 2 & smaller	307x409 & smaller	70	36	26	16
		140	35	25	15
No. 3 Cylinder	404x700	70	50	32	22
		140	45	30	20
No. 10	603x700	70	55	37	25
		140	50	35	23

Peas, dry soaked: See Beans, mature, etc.

Peas, Black-eye: See Beans, mature, etc.

Peas, Crowder: See Beans, mature, etc.

(a) These cooks apply only to a brine pack. Other styles of parsnips should not be packed without directions from a laboratory connected with the canning industry. Cans of parsnips packed "asparagus style" should be processed on end.

(b) For processes for vacuum pack peas consult a laboratory connected with the canning industry.

[fol. 854]

Peas and Carrots

Can Name	Dimensions	Initial temperature	240° F.		Time at 245° F.		250° F.
		Deg. F.	Min.		Min.		Min.
No. 2 & smaller	307x409 & smaller	70	45		30		20
		140	40		25		18
No. 10	603x700	70	60		45		28
		140	55		40		25

Peppers or Pimientos, Green

Pressure processes adequate for sterilization render green peppers or green pimientos unmerchantable. It has been found necessary, therefore, to acidify these products to permit safe processing in boiling water and thereby ensure preservation without loss of merchantability. Acidification must be carefully controlled. For detailed procedures consult a laboratory connected with the canning industry.

Peppers or Pimientos, Red

Acidification of red peppers or red pimientos is desirable to prevent spoilage, even though it may not be necessary from the standpoint of public health. Acidification must be carefully controlled. For detailed procedures consult a laboratory connected with the canning industry.

[fol. 855]

Potatoes, sweet, solid pack (a) (c) (e)

Can Name	Dimensions	Initial temperature	Time at 240° F.
		Deg. F.	Min.
No. 1 Picnic	211x400	120	75
		150	65
		180	60
No. 2	307x409	120	105
		150	95
		180	85
No. 2½	401x411	120	120
		150	110
		180	95
No. 3 Cylinder	404x700	150	130
		180	115
		190	105

Potatoes, sweet, syrup pack, Eastern types, whole (b) (c)

Can Name	Dimensions	Put-in syrup strength Deg. Brx	Initial temperature	Time at 240° F.	
			Deg. F.	Min.	Min.
No. 3 Squat & smaller	404x307 & smaller	25° or less	100	34	24
			140	32	22
			160	30	20
		Greater than 25°	100	53	33
			140	48	28
			160	45	25
No. 10	603x700	25° or less	100	50	32
			140	45	29
			160	43	27
		Greater than 25°	100	65	38
			140	55	32
			160	50	29

(a) For processes for asparagus style or vacuum pack sweet potatoes, consult a laboratory connected with the canning industry.

(b) These processes apply to freshly dug Little Stem Jersey, Maryland Golden or similar varieties.

(c) It is emphasized that the sugar used in the canning of this product should comply with the bacterial standards for sugar formulated by the National Cannery Association. See page 54. Under no circumstances should sugar in dry form be added to the cans.

(e) Processes for No. 10 cans considered necessary to safeguard against hazard to health result in a product of unmerchantable quality. It follows, therefore, that solid pack sweet potatoes should not be packed in cans larger than a No. 3 cylinder (404x700).

[fol. 856]

Potatoes, sweet, syrup pack, Porto Rico type (yams), whole,
cut or sliced (c) (d)

Can Name	Dimen- sions	Initial temper- ature	Time at	
		Deg. F.	240° F. Min.	250° F. Min.
No. 2	307x409	140	60	45
		160	55	40
No. 2½	401x411	140	65	50
No. 3 Squat	404x307	160	60	45
No. 10	603x700	140	80	65
		160	75	60

Potatoes, white, sliced or whole, in brine

Can Name	Dimen- sions	Initial temper- ature	Time at	
		Deg. F.	240° F. Min.	250° F. Min.
No. 2	307x409	70	35	23
		140	30	20
No. 2½	401x411	70	40	30
		140	35	25
No. 10 (except sliced)	603x700	70	50	35
		140	45	30
No. 10 (sliced)	603x700	70	55	38
		140	50	32

(c) It is emphasized that the sugar used in the canning of this product should comply with the bacterial standards for sugar formulated by the National Canners Association. See page 54. Under no circumstances should sugar in dry form be added to the cans.

(d) These processes apply to the Porto Rico or similar varieties packed in a syrup having a put-in concentration of 50° Brix or less.

[fol. 837]

Pumpkin or Squash

<u>Can Name</u>	<u>Dimensions</u>	<u>Initial temperature</u>	<u>Time at</u>	
		<u>Deg. F.</u>	<u>240° F.</u>	<u>250° F.</u>
No. 300	300x407	140	70	60
		160	65	55
		180	60	50
No. 2	307x409	140	85	70
		160	80	65
		180	75	60
No. 2½	401x411	140	115	100
		160	105	90
		180	95	75
No. 3 Cylinder	404x700	140	135	115
		160	125	105
		180	110	95
No. 10	603x700	140	235	205
		160	215	185
		180	190	165

• **Soups: See Specialties****Spinach or other greens**

These cooks may not be adequate for continuous cookers, and canners planning to use a continuous cooker should consult a laboratory connected with the canning industry.

Drained weight and net weight are of determining importance with spinach and other greens and must be controlled to ensure that the retort process will carry the intended sterilizing efficiency. The maximum drained weight given cannot be safely exceeded, and the net weight of contents should be at least that given for the respective can sizes. For the minimum drained weights announced by the Food and Drug Administration, see page 56.

Since blanched spinach tends to become stratified horizontally in cans larger than the No. 2, it is found that heat penetration is more rapid when these cans are processed on their sides rather

[fol. 858]

Spinach or other greens
(Continued)

than in a vertical position. Therefore the process is shorter for cans processed in a horizontal position.

Spinach or other greens, whole leaf

Can Name	Dimen- sions	Retort temper- ature <i>Deg. F.</i>	Initial temper- ature <i>Deg. F.</i>	Time <i>Min.</i>	Maxi- mum drained weight	Mini- mum net weight
					<i>Oz.</i>	<i>Oz.</i>
8Z Tall	211x304	252	100 120 140	40 37 35	6.25	7.75
No. 1 (Picnic)	211x400	252	100 120 140	40 37 35	8.0	10.0
No. 300	300x407	252	100 120 140	45 43 40	10.5	13.5
No. 303	303x406	252	100 120 140	50 47 45	11.7	15.2
No. 2	307x409	252	100 120 140	55 53 50	14.5	18
No. 2½ (horizontal position)	401x411	252	100 120 140	55 53 50	21	27
No. 2½ (vertical position)	401x411	252	100 120 140	65 60 55	21	27
No. 10 (horizontal position)	603x700	240	100 120	105 100	66	100
		252	100 120	65 60	66	100
No. 10 (vertical position)	603x700	240	100 120	140 130	66	100
		252	100 120	85 75	66	100

[fol. 859]

Spinach or Other Greens, cut (a)

Can Name	Dimensions	Initial temperature	Time at 240° F.		Maximum drained weight	Minimum net weight
		Deg. F.	Min.	Min.	Oz.	Oz.
8Z Tall	211x304	100	60	45	6.25	7.75
		140	55	40		
No. 1 (Picnic)	211x400	100	60	45	8	10
		140	55	40		
No. 303	363x406	100	80	60	11.7	15.2
		120	75	55		
		140	75	55		
		160	65	50		
No. 2	307x409	100	90	70	14.5	18
		120	85	65		
		140	80	60		
		160	75	55		
No. 2½	401x411	100	105	80	21	27
		120	100	75		
		140	95	70		
		160	90	65		
No. 10	603x700	100	120	95	66	100
		120	115	90		
		140	105	80		
		160	100	70		

Squash: See Pumpkin or Squash

Succotash: See Corn, cream style

Sweetpotatoes: See Potatoes, sweet

Swiss chard: See Spinach

Turnips

Can Name	Dimensions	Initial temperature	Time at 240° F.	
		Deg. F.	Min.	Min.
No. 2½ & smaller	401x411 & smaller	70	34	
		140	30	
No. 10	603x700	70	45	
		140	40	

Turnip tops: See Spinach

(a) These processes are to be used for ¼-inch to ½-inch cuts only. For processes to be applied to smaller or larger cuts, consult a laboratory connected with the canning industry.

[fol. 860]

Vegetables, chopped (a)

<u>Product</u>	<u>Dimen- sions</u>	<u>Initial temper- ature</u>	<u>Time at 240° F.</u>
		<u>Deg. F.</u>	<u>Min.</u>
Beans, green	211x210	120	60
	211x214	140	58
		160	55
Beets	211x210	120	45
	211x214	140	43
		160	40
Carrots	211x210	120	45
	211x214	140	43
		160	40
Spinach	211x210	120	65
	211x214	140	63
		160	60

Vegetable juices: See Specialties

Vegetable salad or mixed vegetables: See Specialties

Vegetable soup: See Specialties

Vegetables, strained (b)

<u>Product</u>	<u>Can Name</u>	<u>Dimen- sions</u>	<u>Initial temper- ature</u>	<u>Time at 240° F.</u>
			<u>Deg. F.</u>	<u>Min.</u>
Asparagus	Baby food	202x214	120	42
			140	40
			160	38
	No. 2	307x409	140	85
			160	80
			180	75
Beans, green	Baby food	202x214	120	42
			140	40
			160	38
	No. 2	307x409	140	85
			160	80
			180	75
Beans, lima	Baby food	202x214	120	53
			140	50
			160	47
	No. 2	307x409	140	105
			160	100
			180	90

Continued on page 41

(a) For strained vegetables packed in 211x210 or 211x214 cans, see processes for "Vegetables, strained".

(b) It should be emphasized that the above processes for No. 2 cans will result in a finished product somewhat below the quality obtained heretofore with shorter processes used for the standard baby food cans.

[fol. 861]

Vegetables, strained (a)
(Continued)

Product	Can Name	Dimensions	Initial temperature	Time at 240° F.
			Deg. F.	Min.
Beets.....	Baby food	202x214	120	42
			140	40
			160	38
	No. 2	307x409	140	90
			160	85
			180	75
Carrots.....	Baby food	202x214	120	42
			140	40
			160	38
	No. 2	307x409	140	90
			160	85
			180	75
Peas.....	Baby food	202x214	120	53
			140	50
			160	47
	No. 2	307x409	140	105
			160	100
			180	90
Potatoes, Sweet.....	Baby food	202x214	120	47
			140	45
			160	43
		211x210	120	58
		211x214	140	55
			160	52
Spinach.....	Baby food	202x214	120	47
			140	45
			160	43
	No. 2	307x409	140	85
			160	80
			180	75
Squash.....	Baby food	202x214	120	42
			140	40
			160	38
		211x210	120	53
		211x214	140	50
			160	47

(a) It should be emphasized that the above processes for No. 2 cans will result in a finished product somewhat below the quality obtained heretofore with shorter processes used for the standard baby food cans.

[fol. 862]

II.—RIPE OLIVES (a)**Whole, with or without pits, in brine**

<u>Can Name</u>	<u>Dimensions</u>	<u>Initial</u>	<u>Time at</u>	
		<u>temperature</u>	<u>240° F.</u>	<u>250° F.</u>
		<u>Deg. F.</u>	<u>Min.</u>	<u>Min.</u>
No. 10 & smaller	603x700 & smaller	70-160	60	50

III.—SPECIALTIES

This is a group of products which vary widely from each other in composition and which from the standpoint of processing have little in common with the standard fruits and vegetables. Specialties may be vegetable products, fish products or meat products, or combinations thereof. Specialties not only differ from each other, but each individual specialty as prepared in different canning plants is likely to vary in composition and in canning procedure from the same product prepared by another maker. Because of this difference in formula and the variation in canning procedure by which they are prepared, specialties should not be canned without directions from a laboratory connected with the canning industry.

IV.—MEAT OR MEAT PRODUCTS

Due to variations in formula and methods of procedure which may affect process relationships, these products should not be packed without directions from a laboratory connected with the canning industry.

V.—CHICKEN OR CHICKEN PRODUCTS

Due to variations in formula and methods of procedure which may affect process relationships, these products should not be packed without directions from a laboratory connected with the canning industry.

(a) For processing minced, crushed, chopped, or sliced olives, a laboratory connected with the canning industry should be consulted, as the size of particles, tightness of pack, and moisture content must be considered before the process is recommended.

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VI.—MARINE PRODUCTS (a)

Clams or Clam chowder (b)

Crab meat, Blue or Gulf, hand-picked, in brine (c)

Can Name	Dimensions	Initial temperature	230° F.		Time at 240° F.		250° F.
		Deg. F.	Min.		Min.		Min.
½ Tuna (No liner).....	307x113 (e)	70	70		35		20
½ Tuna (One piece liner).....	307x113 (e)	70	80		50		35

Crab meat, Blue or Gulf, hand-picked, vacuum pack (c) (d)

Can Name	Dimensions	Initial temperature	230° F.		Time at 240° F.		250° F.
		Deg. F.	Min.		Min.		Min.
½ Tuna (No liner).....	307x113 (e)	70	80		45		35
½ Tuna (One piece liner).....	307x113 (e)	70	85		50		35
———(No liner).....	307x208 (f)	70	85		55		40
———(One piece liner).....	307x208 (f)	70	95		60		45

Crab meat, Dungeness (a)

Fish flakes (a)

Herring and herring roe (a)

(a) For processes for smoked, kippered or specially treated seafoods, consult a laboratory connected with the canning industry.

(b) Due to variation in raw product and lack of standardized packing procedure, this product should not be packed without directions from a laboratory connected with the canning industry.

(c) Processes for mechanically-picked crab meat should be obtained from a laboratory connected with the canning industry.

(d) The processes given for vacuum pack crab meat are dependent on (1) The maintenance of at least 26 inches of can vacuum immediately before processing; (2) the presence of ½ to 1 ounce of free liquid; (3) the use of a fill-in weight which will result in a drained weight not greater than the maximum specified in the applicable footnotes.

(e) Process times suggested for maximum drained weight of 5.25 ounces.

(f) Process times suggested for maximum drained weight of 7.75 ounces.

[fol. 864]

• Lobster (a)

Mackerel, in brine

Can Name	Dimensions	Initial temperature	Time at	
		Deg. F.	240° F. Min.	250° F. Min.
8Z Tall.....	211x304	70	75	60
		130	70	50
No. 300.....	300x407	70	90	75
		130	80	65

Oysters, Cove, Atlantic and Gulf Coast

Can Name	Dimensions	Initial temperature	Time at	
		Deg. F.	240° F. Min.	250° F. Min.
No. 1 (Picnic) & smaller.....	211x400	70	24	14
	& smaller	130	23	13
No. 95.....	307x400	70	28	14
No. 2.....	307x409	130	27	13

Oysters, Pacific Coast

Can Name	Dimensions	Initial temperature	Time at	
		Deg. F.	240° F. Min.	250° F. Min.
No. 1 Tall & Smaller.....	301x411	70	43	
	& smaller	130	40	

Salmon

Can Name	Dimensions	Initial temperature	Time at		Cool Method
		Deg. F.	240° F. Min.	245° F. Min.	
¼ Flat.....	301x106	60	50	40	water
		60	45	35	air
½ Flat.....	307x201.25	60	75	65	water
		60	70	60	air
No. 1 Tall.....	301x411	60	100	90	water
		60	90	80	air

(a) Due to variation in raw product and style of pack and to lack of standardized packing procedure, this product should not be packed without directions from a laboratory connected with the canning industry.

[fol. 865]

Sardines, (a)

Shrimp, wet pack

Can Name	Dimensions	Initial temperature Deg. F.	Time at	
			240° F. Min.	250° F. Min.
No. 1 (Picnic) or smaller	211x400 or smaller	70	26	14
		90	25	13
		120	24	12
No. 95	307x208 307x400	70	27	15
		90	25	13
		120	24	12
No. 5	502x510	70	30	19
		90	27	16
		120	26	15

Shrimp, dry pack

Can Name	Dimensions	Initial temperature Deg. F.	Time at	
			240° F. Min.	250° F. Min.
No. 1 (Picnic) (One piece liner)	211x400	70	80	60
No. 1 (Picnic) (No liner)	211x400	70	70	50
	307x208			
No. 95 (No liner)	307x400	70	75	55

Tuna, all styles, in oil

Can Name	Dimensions	Initial temperature Deg. F.	Time at	
			240° F. Min.	250° F. Min.
¼ Tuna	211x109	70	65	40
½ Tuna	307x113	70	75	55
No. 1 Tuna	401x206	70	95	80
4 Lb. Tuna	603x408	70	230	190

(a) Due to variation in raw product and style of pack and to lack of standardized packing procedure, this product should not be packed without directions from a laboratory connected with the canning industry.

[fol. 866]

APPENDIX**PRECAUTIONS FOR HANDLING FILLED CANS**

The installation of many of the newer labor saving devices for handling filled cans has introduced certain hazards which, if not minimized, may result in some spoilage with the best possible double-seam construction. Before the cans are thoroughly cooled, the seams are slightly expanded and the compound lining is somewhat soft or plastic. In addition to the usual attention to good seam construction, precautions must be taken in handling the cans before they are thoroughly cooled to prevent even small dents on, or near, the double-seams. This involves elimination of fast runways with sharp turns and abrupt stops for handling filled cans both before and after processing. Care should also be taken to avoid conditions which would strain the seams during the processing or cooling; e.g., excessive holding time of unprocessed cans, inadequate exhausting or too rapid release of pressure during cooling. In cooling under pressure, particular attention must be paid to the magnitude of the pressure and the length of time it is maintained since the greater the differential pressure between the inside and the outside of the can, the greater the tendency toward forcing minute quantities of the cooling water into the can during this critical period. Bacterial content of cooling water should be kept as low as possible since the spoilage hazard is reduced in proportion to the number of microorganisms present.

**GENERAL SOURCES AND CONTROL OF SPOILAGE
CONTAMINATION**

The efficiency of any process depends in large measure upon the type and number of microorganisms in the product at the time of canning. In general, the processes presented in this bulletin are regarded as adequate when something greater than an average number of spoilage organisms is present. They are not necessarily adequate in cases of extreme contamination by spoilage bacteria that may or may not be associated with insanitary conditions. Control of contamination by applying the strict principles of sanitation and by other appropriate means, with adequate, organized supervision, inspection and responsibility is a necessary adjunct to any process.

[fol. 867]

Factory surveys to determine the identity of contamination sources and to develop means for their elimination have been conducted since 1926. The surveys have shown that the important sources of significant contamination with heat resistant spoilage organisms are located within the canning plant. Spoilage organisms come originally from the soil and are brought to the canning plant on the raw product. Preliminary washing operations are sufficient, with most products, to reduce this initial soil-borne contamination to a level which will not result in spoilage. However, residual spoilage types may seed the canning equipment and increase in numbers to a degree such that they constitute a spoilage hazard. There are exceptions, notably in the case of asparagus and mushrooms where soil-borne contamination of the raw product may be a direct cause of spoilage.

Factory studies to date have centered chiefly upon the canning of asparagus, corn, mushrooms, peas, pumpkin, and spinach, but facts developed in these studies are applicable to other products. Accordingly, use of the following information should serve to control contamination to a degree that will ensure the effectiveness of the processes presented in this bulletin.

Wooden equipment

In general, the use of wood in canning equipment is not recommended, because bacteria may become seeded in the pores and once established may contaminate food materials to such an extent that spoilage occurs with a process that has been satisfactory for years. Any wooden equipment with which food materials may come in contact, such as brine and hot water tanks, conveyors, blanchers, canning tables and even such small items as paddles and rollers, may act as carriers of contamination. For example, wooden tanks used for storage of hot water for general plant purposes may contaminate a whole canning system. Wooden brine tanks, at the beginning of a day's run, may supply large numbers of organisms to the product being canned. Owing to dilution their number decreases markedly during steady operation, only to build up again during a shutdown. Wood, being porous, is able to retain bacteria and hold them mechanically immune from scrubbing and other cleaning processes. "Seeding" may be prevented to a considerable degree by constant cleaning, but in spite of all that may be done, there is at present no practical treatment which will rid wood of organisms that are established in it.

[fol. 868]

Pumps, pipes, extractors, cyclones, etc.

Pumps, pipes, extractors, cyclones, etc., should be selected from the standpoint of ease in cleaning, because such equipment may hold food material that will serve as a medium for bacterial growth and permit the development of sufficient organisms to contaminate seriously the first part of the next day's pack. All such equipment should be thoroughly cleaned after being used, then thoroughly cooled with water and kept cool until next operated. It should likewise be flushed again with water immediately before it is used.

Care should be taken during the cleaning operation to blow steam through the perforations of steam distribution pipes which are submerged in food or brine during operation and to ensure that all perforations are open. Circulating "feeder" pipes should be thoroughly cleaned at the close of the day's pack. Preferably, they should be so constructed that they may be dismantled and cleaned with brushes. "Dead ends" should be eliminated or provided with drains so that they may be thoroughly flushed at frequent intervals. Pumps should be dismantled during the clean-up operation and only pumps which are adapted to daily cleaning should be used. Some person should be delegated to inspect all cleaning operations to ensure that this work is efficiently done.

Fluming

Flumes, such as those used for conveying peas and whole grain corn, may become sources of bacterial contamination. In particular, the use of water at temperatures in the range of 100°F. to 180°F. should be avoided since this may provide a favorable condition for the growth of thermophilic spoilage bacteria. The reuse of flume water when hot may aggravate the contamination. It is advisable to use only cold water for fluming purposes.

Fillers

Filling machines used with low-acid products have been found to be contaminated with spoilage bacteria. This contamination is usually the result of the filler being maintained at temperatures within the thermophilic growth range. This might occur during operation from contact with a heated product or during shutdown periods from leakage of steam supply valves.

Fillers should be dismantled and cleaned as frequently as practicable. After the day's clean-up, the fillers should be flushed with cold water with all machinery in motion to chill the equipment, and the fillers should be left clean, cold, and empty during

[fol. 869]

the overnight shutdown. If the filler operates at temperatures within the thermophilic range during actual packing operations, it should be emptied of its product every 4 hours and thoroughly flushed with water with all machinery kept in motion.

Canning ingredients

In recent years there has been a growing appreciation of the importance, as carriers of spoilage contamination, of certain ingredients commonly used in canning. Among these are sugar, starch, flour, and dried milk. Bacterial standards for sugar and starch are discussed on page 54.

SPECIFIC SOURCES OF SPOILAGE CONTAMINATION

In addition to the preceding general information on sources of contamination, canners of certain products upon which extensive investigations have been made will find the following additional information and suggestions of value.

Corn

PREHEATING SYSTEMS, MIXING AND BLENDING TANKS. The increasing use of mixing and blending equipment in which corn is handled while hot has demonstrated further need for contamination control. Such equipment while hot (180°F. or higher) does not act as breeding points for spoilage bacteria, but when in the range 100°F. to 180°F. there is opportunity for development of thermophilic organisms. Usually this development occurs overnight and during shutdowns, and the spores which develop during those times serve subsequently to contaminate the run. As a rule, it is best to hold the tanks empty overnight. However, there appears to be no objection to holding them full of cold water provided care is taken to ensure that there are no leaky valves in the line which might tend to warm the equipment. Care should be taken during the cleaning operation to blow out perforated steam supply pipes; otherwise they may hold food material that will serve as a bacterial medium. Flushing and cooling may be accomplished conveniently by tapping a cold water line into the steam supply line adjacent to the mixer and blending tank.

CIRCULATING SYSTEMS. Such systems represent another step in complexity from the preheating systems. The circulating feeder pipes should be thoroughly cleaned at night and preferably they should be so constructed that they may be dismantled and cleaned with brushes.

[fol. 870].

WHOLE KERNEL CORN. With this product special care should be taken to prevent contact with wood equipment and, after being cut, the corn should be subjected to an efficient wash. The use of warm water or hot water in flotation washers should be avoided since such practice may lead to the rapid development of spoilage bacteria. Failure to wash the cut corn properly may result in spoilage.

Peas

The recommendations made with respect to control of blancher contamination in the canning of peas apply also to other products that are blanched in a conventional pea blancher such as lima beans and green and wax beans.

BLANCHERS. Both rotary drum blanchers and tubular blancher systems may become contaminated with thermophilic spoilage bacteria. The contamination which occurs during shut-down periods can be minimized by prompt cooling of the blanchers after use, by thorough cleaning, elimination of steam leaks, and flushing of the blancher system before its next use. However, thermophilic contamination may also occur during operation of either type of blancher system.

In rotary drum blanchers the contaminating bacteria are able to grow on the inner surfaces, above the water line, where temperatures are reduced by cool air drawn into the blanchers under loose-fitting doors and other openings. Any surface in the blancher where the temperature ranges between 100°F. and 180°F. can be the site of bacterial growth from which heat-resistant spores will be washed by condensate into the blanch water, and there contaminate the peas.

Efforts to prevent contamination in rotary drum blanchers should be directed toward elevating inner surface temperatures above 180°F. Blancher doors should be closed and fastened at all times. Doors which are bent or otherwise out of shape should be repaired in order to exclude as much cool air as possible. Vent stacks should be eliminated from the shell of the blancher. The coldest sections within a drum blancher are at the feed end. The use of a spray or steam jet, inserted at the upper edge of the feed end, which delivers steam or hot water (190°F. or higher) over the inside surfaces has been found useful in preventing contamination. During operation the temperature of the blanch water should be as high as practicable (at least 180°F.) and the reels should be kept in motion continuously while the blanchers are being heated or

[fol. 871]

being held at operating temperature. A continuous overflow from the blancher should be maintained during operation.

The blancher water should be dumped as often as practicable since the number of bacterial spores in the water increases with time and use. The drain and water supply pipes should be of sufficient size to permit rapid draining and re-filling.

In tubular blanching systems a large percentage of the flat sour spore contamination occurs in the de-watering reel into which the peas are discharged from the blanchers. Thermophilic bacteria grow on the mesh of the screen and on the surfaces of the splash boards around the reel and the pan underneath. Spores produced by the bacteria are added to the peas as they pass through the reel or may be washed into the water and re-circulated in the blancher. This contamination can be reduced if sprays are installed to wash the surface of the reel with water which is preferably, but not necessarily, chlorinated. The use of cold water for this purpose is desirable to lower the temperature of the peas before they enter the quality grader. Sprays should also wash down the inner surfaces of the splash boards or canopy surrounding the reel. Tests have indicated that cold water is effective in reducing flat sour contamination when used in these sprays. The foam which accumulates on tanks supplying recovered water to tubular blanchers can be the growth site for thermophilic spoilage bacteria. A large, broad overflow should skim the surface of the tank. Top sprays delivering streams of water at a flat angle will help prevent the formation of foam and aid in skimming the tank.

It is important the peas be washed thoroughly after blanching. Adequate washing will remove large numbers of spoilage bacteria but cannot be depended upon to remove all of the bacteria added by a heavy contamination. Washing with cold water will reduce the temperature of the peas and thus help to minimize slime growth in subsequent equipment and prevent undesirable temperature increases in the quality grader brine.

Pumpkin

Practice in pumpkin canning is not standardized and the following suggestions are based upon a study of systems used by a majority of the pumpkin canners. Consideration of sources of contamination in pumpkin canning begins with the wilting equipment.

WOODEN BOX OR TOWER WILTERS. As already noted, wooden equipment is objectionable, but it may be lined with metal if this is practicable.

[fol. 872]

CONTINUOUS METAL OR WOODEN BOX WILTERS. Both metal and wood boxes, used as continuous wilters may be sources of contamination. They are difficult to clean and cool.

CONTINUOUS CONVEYOR PRESSES. There are various modifications in this type of equipment but the same principle is involved, that is, the pumpkin from the wilter is dropped into a hopper and carried between two moving belts. The distance between the belts gradually decreases toward the outlet end, and the pressure that is exerted squeezes the juice from the pumpkin. These presses are complicated mechanically and the parts vary in temperature. Where the temperature is favorable to thermophilic growth there may be some bacterial development. Some measure of control may be exerted by spraying the press "apron" with cold water, but this expedient is not fully satisfactory. From the viewpoint of contamination control the screw type press is much to be preferred. In this equipment the pumpkin is "wormed" through a tapering perforated screen. During operation, the temperature of all parts is so high (180°F. to 200°F.) that no growth is possible. The screw press is readily accessible for cleaning.

CONCENTRATION OF PUMPKIN JUICE. It is usual to discard the juice from the press, but in some cases it is the practice to concentrate this juice and add it to the pumpkin at the finisher. This system is satisfactory when the general packing procedure is such as to keep contamination at a low level. However, the concentration of contamination is increased as the volume of juice is reduced by evaporation, and such contamination as may be present is returned to the product when the juice is not discarded.

Spinach

WASHERS. Spinach washers include "immersion," "spray-rotary" and "spray-belt" types. They are used singly, in multiple, and in various combinations. Their primary function is to remove grit and adhering soil and concurrently the soil-borne bacteria which are present. In all types of equipment, the washing efficiency is determined, at least in part, by the amount of water used. Thorough washing is of primary importance and a large volume of water is required. Washers should not be overloaded because this reduces their efficiency. When both immersion and spray types are used in the same line, better results are achieved if the immersion washer is placed before the spray washer. The first washing should always be done with cold water. The use of warm water in the first wash may lead to increase of bacteria that come from

[fol. 873]

the field with the spinach, thus contaminating the equipment. Water should not be re-circulated where a single washer is used.

BLANCHERS. Blanching equipment may be a source of spoilage bacteria, particularly those of the thermophilic group. To minimize the hazards of spoilage from this source, the washing and cooling treatments previously discussed should be applied. Occasionally rotary drum pea blanchers have been used, but as this type of equipment is difficult to clean there is opportunity for the development of spoilage organisms, resulting in continuous contamination of the spinach. Spoilage has been traced to such a blancher and its use is therefore not recommended. The blanch water should be renewed at a reasonably rapid rate.

SIGNIFICANCE OF SUGAR AND STARCH CONTAMINATION

Sugar, both beet and cane in dry or liquid form, may carry spores of all three groups of thermophilic bacteria that are important as spoilage agents in low-acid canned foods. The sugar industry is aware of this condition and has taken steps to control thermophilic contamination in its products. In 1931 the National Canners Association formulated and published bacterial standards for sugar as a basis for its judgment regarding the suitability of sugar to be used in canning low-acid products. These standards have been applied by control laboratories connected with the canning industry, by the sugar industry, by Federal and State laboratories, etc. That part of the published statement referring to standards reads as follows:

TOTAL THERMOPHILIC SPORE COUNT: For the five samples examined, there shall be a maximum of not more than 150 spores and an average of not more than 125 spores per 10 grams of sugar.

FLAT SOUR SPORES: For the five samples examined, there shall be a maximum of not more than 75 spores and an average of not more than 50 spores per 10 grams of sugar.

THERMOPHILIC ANAEROBIC SPORES: These shall be present in not more than three of the five samples and in any one sample to the extent of not more than four of six tubes inoculated by the standard procedure.

SULFIDE SPOILAGE SPORES: These shall be present in not more than two of the five samples and in any one sample to the extent of not more than five spores per 10 grams.

Sugar that is certified as suitable for canning low-acid vegetables is produced by large manufacturers of both beet and cane sugar. It is recommended that canners of low-acid products specify that such sugar be provided, and it is suggested as an added safeguard that samples of delivery be submitted from time to time to a labora-

[fol. 874]

tory connected with the canning industry to determine whether deliveries conform to specifications. In collecting dry sugar samples, five individual 1/2 pound quantities should be taken from each of five bags or other containers of the shipment or lot in question. These samples should be sent to the laboratory in clean, sealed containers. If samples from more than one shipment or lot are submitted each container should be appropriately marked to distinguish the lot of its origin.

It is appreciated that the adequacy of this sampling will vary in relation to the size of the shipment or lot, but it is felt that where there is any significant variability in the shipment this fact will become evident in the majority of cases through individual tests on five samples.

For sampling liquid sugar, three individual samples of approximately 6 ounces each should be drawn from the tank or pumping line. The first sample should be taken at the beginning of the pumping operation, the second at the mid-point, and the third near the end of the pumping. Each sample should be sealed and marked with its number and the designation of the lot of its origin.

The significance of starch contamination has also been demonstrated and starch to be used in the canning of low-acid products should be purchased on specification. The standards for sugar contamination may also be applied to starch and other cereal ingredients, and periodic laboratory checks are desirable.

Minimum Drained Weights

Mushrooms

A maximum drained weight for each can size is specified in the process table which appears on page 32. It is desired here to emphasize again the importance of not exceeding this maximum drained weight. At the same time, it is necessary that the fill of container comply with the Standard of Fill of Container issued by the Food and Drug Administration. The minimum drained weight of mushrooms, in ounces, as contained in the Standard, is listed below for each can size for which processes are suggested:

Can name	Dimensions	Minimum drained weight Oz.
2Z Mushroom	202x204	2.0
4Z Mushroom	211x212	4.0
8Z Mushroom	300x400	8.0
Jumbo	307x510	16.0
No. 10	603x700	68.0

[fol. 875]

Spinach

In the processes for spinach suggested on pages 38 and 39 a maximum drained weight of spinach and minimum net weight of the entire contents of the can are suggested for each size of can. It is desired here to emphasize again the importance of not exceeding this maximum drained weight and of securing at least the minimum net weight. At the same time it is, of course, important here, as elsewhere, to avoid slack fill. The Food and Drug Administration has announced that the weight of drained spinach should be at least 13.0, 19.0, and 60.0 ounces, respectively, in No. 2, No. 2½, and No. 10 cans. It is also stated by the Food and Drug Administration that a can of any other size should have a drained weight proportional to the weight stated above for the nearest size of can. Corresponding weights for other sizes of cans for which processes are given in this bulletin are shown in the tabular statement given below:

Can Name	Dimensions	Maximum
		drained weight Ozs.
8Z Tall	211x304	5.5
No. 1 (Picnic)	211x400	7.0
No. 300	300x407	9.7
No. 303	303x406	10.7
No. 2	307x409	13.0
No. 2½	401x411	19.0
No. 10	603x700	60.0

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[fol. 877]

DAILY PROCESS RECORD CARD

[illegible]

[fol. 878]

IMPORTANT POINTS FOR RETORT OPERATORS

1. Read carefully the entire introduction to NCA Bulletin 26-L in order that you may understand the significance of the tasks you perform.
2. Don't allow crates of cans to stand around before processing. Spoilage may result. See page 15.
3. Don't trust your memory on processes. Consult Bulletin 26-L.
4. Keep retort instruments and valves in good working order. Instruments need periodic testing.
5. Vent retorts thoroughly. Don't start timing process until temperature is up and pressure gauge and thermometer agree. See page 17.
6. Timing the process is only part of the job. Keep the retort temperature correct.
7. Keep permanent time and temperature records of every retort load processed. See opposite page.
8. Cool cans properly. Too little cooling may cause either stackburn or spoilage; too much may cause rusting.

[fol. 879]

GOVERNMENT'S EXHIBIT 348

Owens-Illinois Glass Company

Study of Can Costs Versus 1-Way Bottle Cost to Brewer

The following study is based on the best costs and prices obtainable and in effect on May 1, 1956. The items compared are the 12 ounce Flat Top Beer can with a three color lithograph and the 12 ounce One-Way Beer bottle. Both items compared represent the standard container in their field. The comparison covers direct costs only and only those direct costs that are variable between can and bottle.

Requested by: Mr. M. A. Hellrung.

Prepared by: Glass Container Comptroller's.

Date: May 4, 1956.

[fol. 880]

	Cost Per Gross		
	Flat Top Can	One-Way Bottle	Bottle Cost Under/ (Over)
Cost of Container to Brewer.....	\$4.80*	\$3.70	\$1.10
Carton Cost—Outers for Carriers**.....	.33	—	.33
Carrier Cost—6 Container Park.....	.72	1.20	(.48)
Labels.....	—	.12	(.12)
Crowns.....	—	23½	(.23½)
Filling Costs—Labor & Fringe Benefits.....	.12	.15	(.03)
Direct Cost to Brewer at Dock.....	\$5.97	\$5.45½	\$.51½
Outbound Freight—Brewer to Distributor.....	.51	.67	(.16)
Total Cost Delivered to Distributor.....	\$6.48	\$6.12½	\$.35½

All outbound freight is calculated at minimum rates, averaging three hundred miles outbound from breweries.

* Includes average inbound freight on can.

** Cans based on 4 dozen outer, bottles on 2 dozen.

[fol. 881] Line labor and speeds were selected from the most modern lines obtainable. The summary is:

	Packed in 6-Pak Carriers	
	Flat Top Can	1-Way Bottle
Line Speed per Minute.....	600	400
Direct Line Labor per 2 Dozen Cases.....	\$.020	\$.025
Employees Per Line.....	12	10

The above is subject to individual practices and union restrictions. For example, quality minded brewers sometime have two inspectors on the glass line to make sure no

foreign matter appears in the beer after bottling. This would add $\frac{1}{2}\text{¢}$ per 2 dozen case to the filling cost for glass.

The extra man hours needed on the can line is due to the higher filling speed—one man at the unscrambler and one line operator, this latter employee being a combined maintenance-inspector.

It is believed that a 1-way bottle line could approximate can speeds with sufficient capital investment. This is estimated at \$150,000 per line to convert an existing line, or \$300,000 for an all new line. However, there is some doubt as to whether glass business warrants this type of expenditure. It should also be noted that higher line speeds for bottles would mean adding line labor, so that glass filling cost per case at can speeds would be the same as filling costs for tin.

[fol. 882] An analysis of line labor for 1-way beer containers follows:

	12 Oz. Beer	
	Flat Top Can	1-Way Glass
Line Speed per Minute.....	600	400
2 Dozen Cases—per Hours.....	1,500	1,000
2 Dozen Cases—8 Hour Shift.....	12,000	8,000
Direct Line Labor—Employees		
Feed Empties to Line.....	2	2
Unscrambler*	2	1
Filler and Crowner.....	1	1
Closing Machine	1	—
Pasteurizer Discharge	1	1
Labeller	—	1
Casing	2	2
Handling—To Whse. or Loading Dock.....	2	2
Line Operator	1	—
Total Direct Line Employees.....	12	10
Man Hours per 8 Hour Shift.....	96	80
Cost per Shift @ \$2.50 per man hour)**.....	\$240.00	\$200.00
Cost per Case—Direct Line Labor.....	\$.020	\$.025

* Includes rinses.

** Includes fringe benefits.

[fol. 883] The can price is a composite of prices obtained from several sources, none of which varied to any appreciable extent from the average. This can price covers cans only; carton cost is separate. The bottle price includes price of carton designed to handle 6 pack carrier. The carriers are purchased by the brewer.

Crown and label costs—cover types of crowns and labels generally standard to the Industry.

On freight costs which are variable with location, the same rates and length of haul was used for both cans and bottles. The length of haul developed for both in and outbound freight represents the best estimate of the average for the industry.

Indirect costs and costs related to the maintenance of equipment, power used, etc., were excluded from the comparison. Reasonably exact estimates of such costs were not available, though indications are that no great variance exists between can and bottle costs for this type of expense.

In general the attempt was made here to show the fairest possible comparison using costs available from as many sources as possible. It should be understood that some variation in costs exists between locations, size and type of brewery operation, etc., while this could have some effect on overall costs for cans and bottles the ratios between the two should be approximately the same.

[fol. 884] GOVERNMENT'S EXHIBIT 348a

April 1, 1955.

Mr. M. A. Hellrung—14

Can vs. Glass Prices—Florida Fruit Packs

Following is approximate can advantage per gross vs. comparable glass items. These are for sizes and items selected as representative for packing fruit sections and crystals. No filling costs or outbound freight are included.

	8 oz.	16 oz.	32 oz.	1 Gallon
F.O.B. Mfg. (also Jacksonville, Fla.).....	\$1.32	\$3.57	\$4.23	\$10.32
F.O.B. Bradenton, Fla.....	1.42	3.86	4.57	11.34
F.O.B. Miami, Fla.....	1.28	3.61	4.22	10.38

The attached schedule details the cost elements included, mold and can numbers, etc.

Note: Comparable item to gallon glass is # 10 can--105% oz. capacity

Qualifications:

We are not sure the can prices used are those actually paid by the packer. There are three can companies operating eight can plants in the Florida fruit area, and what

the actual price situation is is not known. Parmalee was unable to get any area can prices—those used were secured from Nolde Notman in Indianapolis and some previous figures from Jack Thayer. They are close to can prices published in the 1954 "Canning Trade" almanac. Parmalee did advise can carton prices.

Can bags and label cost were not included. While the can wrap around label is probably more expensive than for glass, the differential in favor of glass is probably pennies per gross and wouldn't affect the total too much. The same is true of can bags—they are 12¢ each, and even where used would affect the largest size can (the No. 10) by only 14¢ per gross.

Another questionable figure is can weights used to calculate inbound freight—we had to estimate these, starting with a known weight in the 8 oz. size. We are getting a collection of packers cans together and will have actual weights later.

Comptroller's Department, Glass Container Division.
N. J. Laird:ed

[fol. 885]

Bottle vs. Can Prices—Per Gross

	8 oz. Crystals		16 oz.		32 oz.		1 Gallon	
	Bottle	Can	Bottle	Can	Bottle	Can	Bottle	Can
Container Cost	\$3.22	\$3.15	\$5.49	\$3.61	\$ 7.90	\$ 5.57	\$23.91	\$13.76
Reshipper	—	.27	—	.45	—	.68	—	2.70
Closure	1.52	—	2.14	—	2.55	—	2.89	—
Label	—	—	—	—	—	—	—	—
Bags	—	—	—	—	—	—	—	—
Total—F.O.B. Manufacturer	4.74	3.42	7.63	4.06	10.45	6.25	26.80	16.48
Total—F.O.B. Bradenton, Fla.	4.95	3.53	8.08	4.22	11.04	6.47	28.59	17.15
Lakeland, Fla.	4.95	3.51	8.08	4.19	11.04	6.43	28.59	17.03
Miami, Fla.	4.89	3.61	7.94	4.23	10.86	6.64	28.04	17.66
Jacksonville, Fla.	4.74	3.42	7.63	4.06	10.45	6.25	26.80	16.48

Freight Adds—To:

Bradenton	21	11	45	16	59	22	1.79	.67
Lakeland	21	.09	45	13	59	.18	1.79	.55
Miami .....	.15	.19	31	27	41	.39	1.24	1.18
Jacksonville	—	—	—	—	—	—	—	—
Bottle or Can No.	CP-3265	211x304	CT-3956	300x407	C-4002	401x411	C-2979	603x700
Finish	58-3767	—	77-3750	—	83-400	—	89-400	—
Packing	2 Dz 13	4 Dz.	1 Dz. #13	2 Dz.	1 Dz. 123A	2 Dz.	1/4 Dz.	1/2 Dz.
Capacity (ounces)	8-13/64	#1 Res.	16	#1 Res.	32	#1 Res.	128	#1 Res.
		8		16		32		105%

[fol. 886]

GOVERNMENT'S EXHIBIT 348b

Owens-Illinois Glass Company
Study of Quart 1-Way Beer Containers

Glass vs. Tin

From figures developed under subject study, it is estimated that container and related costs for quart 1-Way beer shows:

1. An advantage per 1 dozen case of 36¢ in favor of glass vs. tin, or 32%.
2. A glass advantage after average estimated freight to distribution of about 32½¢ per 1 dozen case, or 27%.

Requested by: Mr. M. A. Hellrung.

Prepared by: Glass Container Comptroller's.

Date: June 4, 1956.

[fol. 887] This study has been developed in much the same manner as the 12 oz. 1-Way Beer study submitted on May 4th, 1956. Bottle and can prices are the most recent prices, and are on the most common item. As in the case of the 12 oz., the figures in this study are meant to be a composite of the Eastern Brewery Industry cost—they cannot be said to fit any one particular brewery. Quoting from a similar study made by the Stevenson, Jordan & Harrison firm for us in 1939, "Since (Brewery) management efficiency varies widely, comparison of these costs, segregated by packages, *between breweries* is not fruitful; this kind of comparison gives information which bears more on type of management than on type container used."

We have, through Packaging Research, used line speeds which can be attained when processed on equipment of an accepted efficiency available to all breweries, and under achievable good conditions of labor and expense controls. Freight rates, both inbound on cans and outbound to distribution, have been based on what our Sales people feel to be representative lengths of haul.

Prices of cans, crowns and labels were secured from the St. Louis branch through our Sales people. Only the in-

escapable costs of containers, crowns, labels, direct line labor, and freight have been included. No items of bottle house overhead, or Brewery general overhead have been considered—spread of such items would have little practical [fol. 888] effect in a given container's cost.

Detail of study follows in three sections:

Schedule 1—Cost Summary, showing breakdown of direct cost items used in determining glass-tin package differentials.

Schedule 2—Statistics, listing the various elements from which package costs and freight were developed.

Schedule 3—Direct Line Costs, or the detail of direct labor and filling speeds.

[fol. 889]

Schedule 1

Cost

	Quart Beer—Cone Top Can	Cost per Gross 1 Way Glass
Cost of Container to Brewer.....	\$11.419*	\$ 8.370
Carton Cost—Outers	1.359	—
Labels	—	.134
Crowns .....	.300	.300
Filling Costs—Labor & Fringe Benefits.....	.264	.264
Direct Cost to Brewer at Dock.....	13.342	9.068
Outbound Freight—Brewery to Distributor....	1.304	1.669
Total Cost Delivered to Distributor.....	14.646	10.737
Per One Doz. Case.....	1.221	.895

* Includes inbound freight—Milwaukee to St. Louis.

[fol. 890]

Schedule 2

Statistics—Quart Beer Containers

	3 Color Cone Top Can	1 Way Bottle GB-1812
Container Price	\$ 74.80/M	\$8.37 per gross
Inbound Freight (Milw. to St. Louis)...	88¢/Cwt. plus 3%	—
Carton Price	\$113.23/M	—
Carton Style	1 Doz. Reshipper— No parts	1 Doz. IV2A 3%
Carton Weight	1009 #/M	1.44 # per Ctn.
Container weight—Each	6.85 Oz.	17½ oz.
Outbound Frt.—Brewer to Distr. (Based on 325 Miles—Milw. to St. Paul)	35¢/Cwt. plus 3%	—
Crowns	30¢/Gross	—
Labels—Body	—	78½¢/M
Neck (Not die cut).....	—	14½¢/M
Pkg. Weight per Gross:		
Container	61.65 #	157.50 #
Carton	12.11	17.28
Total	73.76	174.78
Product	288.00	288.00
Total Per Gross.....	361.76	462.78
Total per 1 Doz. Case.....	30.15 #	38.57 #

Note: The can used in above is regulation weight cone-top, and not the new snap-cap featured by Pabst. Comparative sizes and weights follow:

	32 Oz. Cone Top Can Snap Cap	Conventional
Size	3¾" x 6¾" Hght.	3½ x 7½
Weight per Can.....	6¾ oz.	6.85 oz.
Weight per Gross.....	55½ #	61.65 #

[fol. 891]

Schedule 3

Direct Line Costs—Quart 1 Way Beer

	32 Oz. Beer	
	1 Way Glass	Cone Top Can
Line Speed per minute.....	250	250
1 Doz. Cases—per hour.....	1,250	1,250
Direct Line Labor:		
Feed to Line.....	2	2
Uncaser.....	1	—
Unscrambler & Rinser.....	—	2
Filler-Crowner.....	1	1
Pasteurizer Attendant.....	1	1
Labeller.....	1	—
Case Packer.....	2	2
Case Sealer.....	1	1
Filled Case Handling.....	2	2
Total.....	11	11
Direct Line Cost per Hour, @		
@ \$2.50 per Man Hour*	\$27.50	\$27.50
Cost per 1 Dozen Cases.....	\$0.22	\$0.22

* Hourly rate includes fringe benefits.

[fol. 892]

GOVERNMENT'S EXHIBIT 348c

Sources of Information

Can vs. Glass Prices—1942-1946 vs. 1-1-57

Can Costs

1942-1946—Vegetable cans from "Canning Trade" almanac. Baby Food—secured verbally from Bob Graham in early 1954. Beer Can—from price lists furnished by Jack Thayer.

January 1, 1957—All cans from current lists.

Can Carton Costs—Developed from can sizes and packing by OI Comptroller—based on board market costs in periods involved.

Inbound Freight—Cans—At estimated 80¢ per cwt. (current) on weight of empty cans and cartons. This 80¢ converted to 1942-1946 period through use of freight tariff increases experienced by OI.

Bottle Costs, Cartons, Inbound Freight—From OI East lists.

Label Costs and Crowns—1-way Beer bottle—Current price from Swan in Milwaukee—his label figures were for

2450

quarts but we converted to 12 oz. body and die cut. neck label. The 1942-1946 figures from 1939 study made by Stevenson, Jordan and Harrison.

Bottle Closures—Current figures from OI East lists. The 1942-1946 period from a White Cap price list for the vegetable jars (66 and 83 m/m for 303 and 2½). The baby food cap—48 m/m—was estimated in the base period from the other sizes.

Comptroller's Department, Glass Container Division,
N. J. Laird:ed—2/27/57.

[fol. 893]

CAN VS. GLASS PRICES

1942-1946 Average vs. ^{April} January 1, 1957

	#221 (28 oz. Vegetable)			#303 (17 oz. Vegetable)			5 oz. Baby Food			12 oz. Beer		
	1942-1946	1-1-57	Incr.	1942-1946	1-1-57	Incr.	1942-1946	1-1-57	Incr.	1942-1946	1-1-57	Incr.
<u>Can - Cost Per Gross</u>												
Container	\$ 3.25	\$ 6.19	90.5	\$ 2.56	\$ 4.77	86.3	\$ 1.31	\$ 2.51	88.7	\$ 3.07	\$ 5.12	66.8
Carton	.51	.88	72.5	.35	.61	74.3	.14	.23	64.3	.33	.57	72.7
Inbound Freight	.23	.47	101.3	.16	.32	100.0	.05	.12	100.0	.13	.26	100.0
Total	3.99	7.54	90.0	3.07	5.70	85.7	1.53	2.86	85.9	3.53	5.95	66.6
<u>Bottle - Cost Per Gross</u>												
Container, Ctn. Inc. Frt.	3.45	7.62	120.9	2.60	5.17	98.8	1.55	2.72	75.5	2.35	4.05	72.3
Closure	1.48	2.67	80.4	1.12	1.80	67.9	.82	1.25	53.0	.20	.30	50.0
Label	-	-	-	-	-	-	-	-	-	.14	.35	150.0
Total	4.93	10.29	108.7	3.72	7.05	89.5	2.37	3.97	67.5	2.69	4.70	74.7
<u>Bottle - (Over) Under Can:</u>												
Per Gross	(.94)	(2.75)		(.65)	(1.93)		(.84)	(1.11)		.34	1.25	
\$	(23.6)	(36.5)		(21.2)	(34.7)		(51.9)	(33.8)		23.8	21.0	
		57.4			47.3			16.2			37.5	
					96.0			41.4			64.0	

Comptroller's Department
Glass Container Division
H. J. Lairdied - 2/27/57

Can Price 4/1/58 (+2.3%) = 6.63

46.7/25

Feb 4/1/57

54

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[fol. 894] GOVERNMENT'S EXHIBIT 348d

Mr. M. A. Hellrung—14
cc: Mr. E. M. Delaplane—13

April 23, 1958.

1-Way Beer Prices

Following are comparative prices on 1-Way beer containers including the container cost, crowns, labels, carriers, and outer cartons, and including the latest can prices increase. Attached schedule details each item of cost included. Can figures were secured from the Milwaukee Branch.

	Bottle—2 Doz 6 Pak GB7	GB 20	Can—4 Doz 6 Pak Flat Top Can
Cost per Gross.....	\$6.00	\$5.73	\$6.14
Out. Frt. @ \$1.00 Cwt.....	.77	.70	.35
Total.....	\$6.86	\$6.43	\$6.49

N. J. Laird, Comptroller's Department, Glass Container Division.

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[fol. 895] 1-Way Beer

	GB7	GB 20	CAN
Price Per Gross.....			
Container (Include Inb. Frt).....	\$4.20	\$3.90	\$5.21
Carriers.....	1.32	1.26	.60
Outer.....	—	—	.33
Crowns (3 Color).....	.33	.33	—
Labels—Body.....	.16	.16	—
—Neck.....	.08	.08	—
Total.....	\$6.09	\$5.73	\$6.14
Outbound Frt @ \$1.00 Cwt.....	.77	.70	.35
Total.....	\$6.86	\$6.43	\$6.49
Wght per Gross—Container.....	65.3 #	58.5 #	27.0 #
—Outer Ctn.....	5.3	5.0	3.0
—Carrier.....	6.5	6.2	5.3
Total—Container & Pkg.....	77.1 #	70.1 #	35.3 #
Price per M—Cans & Lids (3 Color).....	—	—	\$ 36.19
Carriers—Per M.....	\$55.00	\$52.50	\$ 25.00
Outer—Per M.....	—	—	\$110.00
Dozen per Outer.....	2	2	4
Size.....	2-37/64 x 7 1/2	2-42/64 x 6 1/2	2 1/2 x 4 1/2

[fol. 396]. GOVERNMENT'S EXHIBIT 348c

Cans vs. Jars Price Per Thousand—Ground Coffee		
Can Price	New (Up 4.7%)	Old
Cans	\$76.13	\$72.73
Shippers	4.80	4.80
Total Cans Cost.....	\$80.73	\$77.33
(Maxwell)		

Cans are sold F.O.B. fabricating plant, roaster to pay freight. In this case, no freight involved.

Glass Price	2 Doz.	1 Doz.
G-50 10½ oz. Wt.		
36 Oz. Overflow		
Per Gross	\$ 7.20	\$ 7.50
Jars	\$50.40	\$52.80
Labels	4.00	4.00
Closure	12.84	12.84
	\$67.24	\$69.64
Excess Freight Jars over Cans \$1.00 per cwt.....	2.97	2.97
Total Jar Cost	\$70.21	\$72.61

Weight	Individual	Per M (Exclusive Carton)
Jars	10½ oz.	656 lbs.
Cans	5½ oz.	359 lbs.
		297 lbs. weight advantage cans

Closure price dependent on new liner being workable. There may also be slight variations in other figures.
Instant Products Division
October 21, 1958

[fol. 897]

GOVERNMENT'S EXHIBIT 348f

	Baby Foods—Tin vs. Glass East—Vapak Cap for Glass		8 oz. Baby Food	
	Tin	Glass	Tin	Glass
Per Gross:				
Container	\$2.724	\$2.770	\$3.34	\$3.56
Carton .....	.342	—	.41	—
Caps	—	1.200	—	1.50
Label .....	.159	.150	.18	.16
Tin Under Glass:	3.225	4.120	3.93	5.22

Per Gross	\$.895	\$ 1.29
%	27.8%	32.8%

East—Twist-off Cap for Glass				
Container	2.724	2.770	3.34	3.56
Carton .....	.342	—	.41	—
Caps	—	1.180	—	1.38
Label .....	.159	.150	.18	.16
Tin Under Glass:	3.225	4.100	3.93	5.10
Per Gross	\$.875	\$ 1.17		
%	27.1%	29.8%		

West—Vapak Cap for Glass		
	5 oz. Baby Food	
	Tin	Glass
Container	\$ 2.73	\$ 2.99
Cases .....	.22	—
Caps	—	1.24
Label .....	.16	.15
Tin Under Glass:	3.11	4.38
Per Gross	\$ 1.27	
%	40.8%	

Comptroller's Department, NJL 4/16/59

[fol. 898] • GOVERNMENT'S EXHIBIT 348g

Mr. M. A. Hellrung
cc: Mr. L. K. Cooper
b/c Mr. A. C. Hirth

Beer Containers—One-Way Glass vs. Tin

April 27, 1959.

We contacted Kiger in the New York branch for the latest beer can price, and this latest price is included in the following. This new price represents a decrease of 5% from the previous list, and was effective on Feb. 19th, 1959 retroactive to Dec. 15th, 1958. This is the latest beer can price, as Kiger says cuts in can prices since Feb. 19th have not been extended to beer cans.

	Price Per Gross	
	GB 2000	Can
Container	\$3.78	\$4.98
Carriers .....	.93	.67
Outer Ctn	—	.32
Crowns .....	.31	—
Labels .....	.31	—
Inbound Frt.	—	.04
	5.33	6.01

or 11¢ bottle advantage per 2 doz. case.

Cans based on \$34.59 per M. Can carriers at \$27.75 per M. Bottle Carriers at \$38.75 Per M.

N. J. Laird, Comptroller's Department, Glass Container Division.

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[fol. 899] GOVERNMENT'S EXHIBIT 348h

Mr. G. W. Borman
cc: Mr. K. J. Solon
b/c Mr. A. C. Hirth

Cans vs. Glass Prices

May 6, 1959.

Attached is proposed chart for use in Directing Committee meetings, and as suggested by Mr. Bensinger early this year. The can figures came from the Branches, and so far as is known are the most recent prices following the price war. We have included cartons, labels, closures, reshipper, and carriers in the cost per gross. On the Aersol, the valve or fitment is not included. Inbound freight on cans is included, but not outbound freight on customers shipment of filled package. Neither is filling cost included. All the can costs were for a specific customer that the Branches were able to get figures from—it is not known if this is a fair sample nationally. Attached schedule details the figures.

This is another addition to our growing list of charts. Would REG be interested in a review in the interest of weeding out some of them.

N. J. Laird, Comptroller's Department, Glass Container Division.

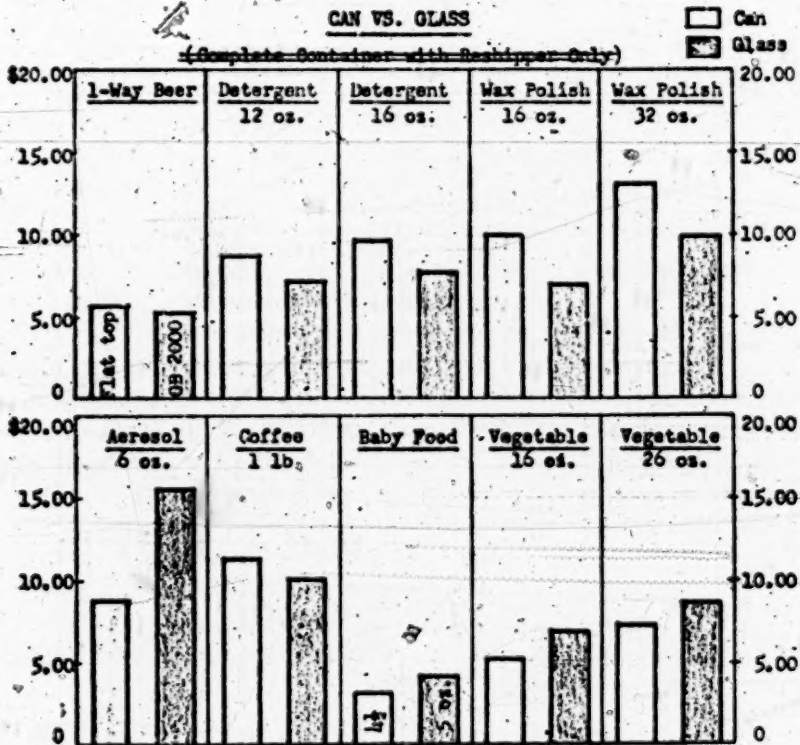
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[fol. 900]

	Cost Per Gross Can	Glass	Glass (Over) Under Per Gross	%
12 oz Beer	\$ 5.73	\$ 5.33	\$.40	7.5%
12 oz Detergent	8.71	7.17	1.54	21.5
16 oz Detergent	9.64	7.73	1.91	24.7
16 oz Polish	9.91	6.92	2.99	43.2
32 oz Polish	13.13	9.88	3.25	32.9
6 oz Aersol	8.76	15.53	(6.77)	(43.6)
1 lb Coffee	11.27	10.09	1.18	11.7
5 oz Baby Food	3.09	4.12	(1.03)	(25.0)
303-16 oz	5.18	6.81	(1.63)	(24.0)
2 1/4-26 oz	7.18	8.53	(1.35)	(16.9)

2458

[fol. 901]



[fol. 902]

GOVERNMENT'S EXHIBIT 349

4/2/58

Detergents

12-oz. (15-oz. Capacity) Round C/T Finish

	Tin	Per M. Units Glass		
		Boston Rd.	Spec. Rd.	Plastic
Base Price to Customer	\$53.04	\$34.09	\$38.75	\$55.01
3-Color Label	—	5.00	5.00	5.00
Bag Packing .....	.70	—	—	—
Customer Outbound Freight (\$1/Cwt.)	1.68	5.90	6.64	.76
Customer Cost Excluding Caps.	\$55.42	\$44.99	\$50.39	\$60.77
Shipping Weight per M.	168 lbs.	590 lbs.	664 lbs.	76 lbs.

12-oz. (15-oz. Capacity) Oblong C/T Finish

	Tin	Glass	Plastic
Base Price to Customer	(No List)	\$45.63	\$57.67
3-Color Label	(No List)	5.00	5.00
Bag Packing	—	7.50	.78
Customer Outbound Freight (\$1/Cwt.)	—	7.50	.78
Customer Cost Excluding Caps.	—	\$58.13	\$63.45
Shipping Weight per M.	—	750 lbs.	78 lbs.

22-oz. (25.5-oz. Capacity) Round C/T Finish

	Tin	Glass		
		Boston Rd.	Spec. Rd.	Plastic
Base Price to Customer	\$68.02	(No List)	\$56.25	\$70.11
3-Color Label	—	—	5.00	5.00
Bag Packing	1.00	—	—	—
Customer Outbound Freight (\$1/Cwt.)	2.80	—	9.37	1.06
Customer Cost Excluding Caps.	\$71.82	—	\$70.62	\$76.17
Shipping Weight per M.	280 lbs.	—	937 lbs.	106 lbs.

22-oz. (25.5-oz. Capacity) Oblong C/T Finish

	Tin	Glass	Plastic
Base Price to Customer	(No List)	\$76.53	\$76.34
3-Color Label	(No List)	5.00	5.00
Bag Packing	—	—	—
Customer Outbound Freight (\$1/Cwt.)	—	12.15	1.14
Customer Cost Excluding Caps.	—	\$93.68	\$82.48
Shipping Weight per M.	—	1,215 lbs.	114 lbs.

[fol. 903]

4/2/58

Detergents

32-oz. (35.35-oz. Capacity) Round C/T Finish

	Per M Units Glass			
	Boston			
	Tin	Rd.	Spec. Rd.	Plastic
Base Price to Customer	\$90.50	\$57.43	61.53	\$92.53
3-Color Label	—	5.00	5.00	5.00
Bag Packing	1.00	—	—	—
Customer Outbound Freight (\$1/Cwt.)	3.70	11.10	12.30	1.36
Customer Cost Excluding Caps.	85.20	\$73.43	\$78.83	\$98.89
Shipping Weight per M.	370 lbs.	1,110 lbs.	1,230 lbs.	136 lbs.

32-oz. (35.35-oz. Capacity) Oblong C/T Finish

	Per M Units Glass		
	Tin	Glass	Plastic
Base Price to Customer	(No List)	\$83.19	\$114.58
3-Color Label	—	5.00	5.00
Bag Packing	—	—	—
Customer Outbound Freight (\$1/Cwt.)	—	16.00	1.64
Customer Cost Excluding Caps.	—	\$104.19	\$121.22
Shipping Weight per M.	—	1,000 lbs.	164 lbs.

(32 oz. glass are actually 32 1/2 ozs. and not 35.35 oz.)

[fol. 904]

4/2/58

Liquid Waxes and Polishes

16-oz. Round C/T Finish

	Per M Units Glass			
	Boston			
	Tin	Rd.	Spec. Rd.	Plastic
Base Price to Customer	\$56.50	\$40.00	\$42.01	\$58.76
3-Color Label	—	5.00	5.00	5.00
Bag Packing .....	.70	—	—	—
Customer Outbound Freight (\$1/Cwt.)	2.00	7.30	8.20	.82
Customer Cost Excluding Caps.	\$59.20	\$52.30	\$55.21	\$64.58
Shipping Weight per M.	200 lbs.	730 lbs.	820 lbs.	92 lbs.

16-oz. Oblong C/T Finish

	Per M Units Glass		
	Tin	Glass	Plastic
Base Price to Customer	\$63.45	\$47.71	\$62.60
3-Color Label	—	5.00	5.00
Bag Packing .....	.70	—	—
Customer Outbound Freight (\$1/Cwt.)	2.25	9.67	.87
Customer Cost Excluding Caps.	\$66.40	\$62.38	\$68.47
Shipping Weight per M.	225 lbs.	967 lbs.	87 lbs.

32-oz. Round C/T Finish

	Glass		
	Tin	Boston Rd. Spec. Rd.	Plastic
Base Price to Customer	\$79.15	\$57.43	\$61.53
3-Color Label	—	5.00	5.00
Bag Packing	1.00	—	—
Customer Outbound Freight (\$1/Cwt.)	3.60	11.00	12.30
Customer Cost Excluding Caps	\$83.75	\$73.43	\$78.83
Shipping Weight per M	360 lbs.	1,100 lbs.	1,230 lbs.

32-oz. Oblong C/T Finish

	Tin	Glass	Plastic
Base Price to Customer	\$84.80	\$83.15	\$109.66
3-Color Label	—	5.00	5.00
Bag Packing	1.00	—	—
Customer Outbound Freight (\$1/Cwt.)	4.00	16.00	1.57
Customer Cost Excluding Caps	\$89.80	\$104.19	\$116.23
Shipping Weight per M	400 lbs.	1,600 lbs.	157 lbs.

[fol. 905] GOVERNMENT'S EXHIBIT 349a

March 19, 1959.

Mr. O. G. Burck—6 (3)
 cc: Mr. R. T. Wallace—T.C.
 Mr. G. S. Babcock—14

Detergent Containers

The purpose of this report is to indicate the pricing and customer cost differentials between glass, tin, and plastic packages for liquid detergents. The three sizes of containers used in the detergent industry are 12, 22, and 32 oz. Comparisons have been projected on a per M container basis, since tin and plastics are sold on this unit.

The Glass Container prices and costs have been projected on two styles of containers—List #2 covering rounds and List #4 covering special shapes other than rounds. Tin containers are all rounds. Plastic containers are priced by weight and, at the same weights, can be either rounds or special shapes. We have used the P & G prices and weights because of their representing the intermediate weight range. Recent quotations by Glass Container to P & G on the same shape glass containers we are now supplying in plastic are in line with the list for glass prices.

Customer's delivered cost of empty containers has been computed at distances of 50 and 100 miles. Note that although this delivery cost was computed on glass it was not added to the customer's cost because of glass being sold on a delivered basis. Tin and plastics are sold f.o.b. factory.

Labeling costs have been included on the glass and plastic containers but omitted from tin which is lithographed. Customer's cost of containers, empty freight for 50 to 100 miles, and filled freight for 100, 200, and 400 miles are projected.

We have excluded the cost of closures which would be the same for each type container and would not influence the comparison.

Comptroller's Department, Closure & Plastics Division, P. R. Kelsey.

eb

Attach.

[fol. 906]

12-oz. Detergent Containers

	Glass		Tin	Plastic
	List #2 Rds.	List #4 Spec.		
Service Carton Price/M	\$35.48	\$44.52	\$55.67	\$55.21
Dry Color	—	—	—	2.32
R/S Carton—2 Doz.	6.67	7.78	4.50	6.00
Unit Load	—	—	—	45
Factory Price/M	\$42.15	\$52.30	\$60.17	\$63.98
Label Cost—Customer	\$ 5.00	\$ 5.00	\$ — *	\$ 5.00
Weight—Empty Container/M	611 #	770 #	216 #	129 #
Freight Cost/M— 50 Miles	\$ 1.65	\$ 2.08	\$ 1.23	\$ 1.38
Freight Cost/M—100 Miles	\$ 2.14	\$ 2.70	\$ 1.58	\$ 1.75
Customer's Delivered Cost—				
Empty Containers— 50 Miles	\$47.15**	\$57.00**	\$61.40	\$70.36
Empty Containers—100 Miles	\$47.15**	\$57.00**	\$61.75	\$70.73
Weight—Filled Container/M	1611 #	1770 #	1216 #	1129 #
Freight Cost/M—100 Miles	\$ 4.83	\$ 5.31	\$ 3.65	\$ 3.39
Freight Cost/M—200 Miles	\$ 5.96	\$ 6.55	\$ 4.50	\$ 4.18
Freight Cost/M—400 Miles	\$ 8.70	\$ 9.56	\$ 6.57	\$ 6.10
Customer's Cost/M:				
Empty Container Del'd.— 50 Miles }	\$51.98	\$62.61	\$65.05	\$73.75
Filled Container Del'd.—100 Miles }	\$53.11	\$63.65	\$65.90	\$74.54
Empty Container Del'd.— 50 Miles }	\$55.85	\$66.86	\$67.97	\$76.46
Filled Container Del'd.—400 Miles }	\$51.98	\$62.61	\$65.40	\$74.12
Empty Container Del'd.—100 Miles }	\$53.11	\$63.65	\$66.25	\$74.91
Filled Container Del'd.—200 Miles }	\$55.85	\$66.86	\$68.32	\$76.83
Empty Container Del'd.—100 Miles }				
Filled Container Del'd.—400 Miles }				

* Lithographed 3 color container.

** Delivered Prices—Freight not added.

Comptroller's Department, Closure & Plastics Division.

[fol. 907]

22 oz. Detergent Containers

	Glass			
	List #2 Rds.	List #4 Spec.	Tin	Plastic
Service Carton Price/M	\$50.60	\$72.42	\$71.44	\$74.22
Dry Color	—	—	—	3.37
R/S Carton—1 Doz.	10.62	10.97	7.50	9.00
Unit Load	—	—	—	.75
Factory Price/M	\$61.31	\$83.39	\$78.94	\$87.34
Label Cost—Customer	\$ 5.50	\$ 5.50	\$ —*	\$ 5.50
Weight—Empty Container/M	858 #	1202 #	355 #	185 #
Freight Cost—50 Miles	\$ 2.32	\$ 3.25	\$ 2.02	\$ 1.96
Freight Cost—100 Miles	\$ 3.00	\$ 4.21	\$ 2.50	\$ 2.52
Customer's Delivered Cost—				
Empty Containers—50 Miles	\$66.81**	\$88.89**	\$80.96	\$94.82
Empty Containers—100 Miles	66.81**	88.89**	81.53	95.36
Weight—Filled Container/M	2233 #	2577 #	1730 #	1560 #
Freight Cost—100 Miles	\$ 6.70	\$ 7.73	\$ 5.19	\$ 4.68
Freight Cost—200 Miles	\$ 8.26	\$ 9.53	\$ 6.40	\$ 5.77
Freight Cost—400 Miles	\$12.06	\$13.92	\$ 9.34	\$ 8.42
Customer's Cost/M:				
Empty Container Del'd.—50 Miles				
Filled Container Del'd.—100 Miles	\$73.51	\$96.62	\$86.15	\$99.50
Empty Container Del'd.—50 Miles				
Filled Container Del'd.—200 Miles	\$75.07	\$98.42	\$87.36	\$100.59
Empty Container Del'd.—50 Miles				
Filled Container Del'd.—400 Miles	\$78.87	\$102.81	\$90.30	\$103.24
Empty Container Del'd.—100 Miles				
Filled Container Del'd.—100 Miles	\$73.51	\$96.62	\$86.72	\$100.04
Empty Container Del'd.—100 Miles				
Filled Container Del'd.—200 Miles	\$75.07	\$98.42	\$87.93	\$101.13
Empty Container Del'd.—100 Miles				
Filled Container Del'd.—400 Miles	\$78.87	\$102.81	\$90.87	\$103.78

* Lithographed 3 color container.

** Delivered Prices—Freight not added.

Comptroller's Department, Closure & Plastics Division.

[fol. 908]

32 oz. Detergent Containers

Glass

	List #2 Rds.	List #4 Spec.	Tin	Plastic
Service Carton Prices/M	\$61.52	\$85.97	\$84.43	\$90.27
Dry Color	—	—	—	4.20
R/S Carton— $\frac{3}{4}$ Doz.	12.46	13.75	9.30	11.50
Unit Load	—	—	—	.75
Factory Price/M	\$73.98	\$99.72	\$93.73	\$106.72
Labels Cost—Customer	\$ 6.00	\$ 6.00	\$ —	\$ 6.00
Weight—Empty Container/M	1144 #	1581 #	462 #	236 #
Freight Cost—50 Miles	\$ 3.09	\$ 4.27	\$ 2.63	\$ 2.53
Freight Cost—100 Miles	\$ 4.00	\$ 5.53	\$ 3.37	\$ 3.21
Customer's Delivered Cost—				
Empty Containers—50 Miles	\$79.98**	\$105.72**	\$96.36	\$115.25
Empty Containers—100 Miles	\$79.98**	\$105.72**	\$97.10	\$115.93
Weight—Filled Container/M	3144 #	3581 #	2462 #	2236 #
Freight Cost—100 Miles	\$ 9.43	\$10.74	\$ 7.39	\$ 6.71
Freight Cost—200 Miles	\$11.63	\$13.25	\$ 9.11	\$ 8.27
Freight Cost—400 Miles	\$16.98	\$19.34	\$13.29	\$12.07
Customer's Cost/M:				
Empty Container Del'd.—50 Miles				
Filled Container Del'd.—100 Miles	\$80.41	\$116.46	\$103.75	\$121.96
Empty Container Del'd.—50 Miles				
Filled Container Del'd.—200 Miles	\$91.61	\$118.97	\$105.47	\$123.52
Empty Container Del'd.—50 Miles				
Filled Container Del'd.—400 Miles	\$96.96	\$125.06	\$109.65	\$127.32
Empty Container Del'd.—100 Miles				
Filled Container Del'd.—100 Miles	\$89.41	\$116.46	\$104.49	\$122.64
Empty Container Del'd.—100 Miles				
Filled Container Del'd.—200 Miles	\$91.61	\$118.97	\$106.21	\$124.20
Empty Container Del'd.—100 Miles				
Filled Container Del'd.—400 Miles	\$96.96	\$125.06	\$110.39	\$128.00

* Lithographed 3 color container.

** Delivered Prices—Freight not added.

Comptroller's Department, Closure & Plastics Division.

[fol. 909]

Detergent Containers

Statistical Information

Rates on Empty Containers:

	50 Miles	100 Miles
Glass 30M # Minimum.....	\$.27 per Cwt.	\$.35 per Cwt.
Metal 20M # Minimum.....	.57 per Cwt.	.73 per Cwt.
Plastic 10M # Minimum.....	1.07 per Cwt.	1.36 per Cwt.

Rates on Filled Containers:

	100 Miles	200 Miles	400 Miles
Glass, Tin, and Plastic—			
50M # Minimum	\$30/Cwt.	\$37/Cwt.	\$54/Cwt.

Comptroller's Department, Closure & Plastics Division.

[fol. 910] . GOVERNMENT'S EXHIBIT 349B

10/30/57

Detergents

12-Oz. (15-Oz. Capacity) Round C/T Finish

	Per M Units			
	Glass			
	Tin	Boston Rd.	Spec. Rd.	Plastic
Base Price to Customer.....	\$53.04	\$34.00	\$38.75	\$55.01
3-Color Label	—	5.00	5.00	5.00
Bag Packing .....	.70	—	—	—
Customer Outbound Freight (\$1.00/cwt.)	1.68	5.90	6.64	.76
Customer Cost Excluding Caps.....	\$55.42	\$44.90	\$50.39	\$60.77
Shipping Weight Per M.....	168 lbs.	590 lbs.	664 lbs.	76 lbs.

12-Oz. (15-Oz. Capacity) Oblong C/T Finish

	Tin	Glass	Plastic
Base Price to Customer.....	(No List)	\$45.63	\$57.67
3-Color Label	—	5.00	5.00
Bag Packing	—	—	—
Customer Outbound Freight (\$1.00/cwt.)	—	7.50	.78
Customer Cost Excluding Caps.....	—	\$58.13	\$63.45
Shipping Weight Per M.....	—	750 lbs.	78 lbs.

22-Oz. (25.5-Oz. Capacity) Round C/T Finish

	Glass			
	Tin	Boston Rd.	Spec. Rd.	Plastic
Base Price to Customer.....	\$68.02	(No	\$56.25	\$70.11
3-Color Label	—	List)	5.00	5.00
Bag Packing	1.00	—	—	—
Customer Outbound Freight (\$1.00/cwt.)	2.80	—	9.37	1.06
Customer Cost Excluding Caps.....	\$71.82	—	\$70.62	\$76.17
Shipping Weight Per M.....	280 lbs.		937 lbs.	106 lbs.

22-Oz. (25.5-Oz. Capacity) Oblong C/T Finish

	Tin	Glass	Plastic
Base Price to Customer.....	(No	\$76.53	\$76.34
3-Color Label	List)	5.00	5.00
Bag Packing	—	—	—
Customer Outbound Freight (\$1.00/cwt.)	—	12.15	1.14
Customer Cost Excluding Caps.....	—	\$93.68	\$82.48
Shipping Weight Per M.....		1,215 lbs.	114 lbs.

[401-911]

10/30/57

Detergents

32-Oz. (35.35-Oz. Capacity) Round C/T Finish

	Per M Units Glass			
	Tin	Boston Rd.	Spec. Rd.	Plastic
Base Price to Customer.....	\$80.50	\$57.43	\$61.53	\$92.53
3-Color Label	—	5.00	5.00	5.00
Bag Packing	1.00	—	—	—
Customer Outbound Freight (\$1.00/cwt.)	3.70	11.10	12.30	1.36
Customer Cost Excluding Caps.....	\$85.20	\$73.53	\$78.83	\$98.80
Shipping Weight Per M.....	370 lbs.	1,110 lbs.	1,230 lbs.	136 lbs.

32-Oz. (35.35-Oz. Capacity) Oblong C/T Finish

	Tin	Glass	Plastic
Base Price to Customer.....	(No	\$ 83.19	\$114.58
3-Color Label	List)	5.00	5.00
Bag Packing	—	—	—
Customer Outbound Freight (\$1.00/cwt.)	—	16.00	1.64
Customer Cost Excluding Caps.....	—	\$104.19	\$121.22
Shipping Weight Per M.....	—	1,600 lbs.	164 lbs.

(32 oz. glass are actually 32 oz. and not 35.35 oz.)

[fol. 912]

10/30/57

Liquid Waxes and Polishes

16-Oz. Round C/T Finish

	Per M Units			
	Glass			
	Tin	Boston Rd.	Spec. Rd.	Plastic
Base Price to Customer.....	\$56.50	\$40.00	\$42.01	\$58.76
3-Color Label	—	5.00	5.00	5.00
Bag Packing .....	.70	—	—	—
Customer Outbound Freight (\$1.00/cwt.)	2.00	7.30	8.20	.82
Customer Cost Excluding Caps.....	\$59.20	\$52.30	\$55.21	\$64.58
Shipping Weight Per M.....	200 lbs.	730 lbs.	820 lbs.	82 lbs.

16-Oz. Oblong C/T Finish

	Tin	Glass	Plastic
Base Price to Customer.....	\$63.45	\$47.71	\$62.60
3-Color Label	—	5.00	5.00
Bag Packing .....	.70	—	—
Customer Outbound Freight (\$1.00/cwt.)	2.25	9.67	.87
Customer Cost Excluding Caps.....	\$66.40	\$62.38	\$68.47
Shipping Weight Per M.....	225 lbs.	967 lbs.	87 lbs.

32-Oz. Round C/T Finish

	Glass			
	Tin	Boston Rd.	Spec. Rd.	Plastic
Base Price to Customer.....	\$79.15	\$57.43	\$61.53	\$89.32
3-Color Label	—	5.00	5.00	5.00
Bag Packing	1.00	—	—	—
Customer Outbound Freight (\$1.00/cwt.)	3.60	11.00	12.30	1.30
Customer Cost Excluding Caps.....	\$83.75	\$73.43	\$78.83	\$95.62
Shipping Weight Per M.....	360 lbs.	1,100 lbs.	1,230 lbs.	130 lbs.

32-Oz. Oblong C/T Finish

	Tin	Glass	Plastic
Base Price to Customer.....	\$84.89	\$83.19	\$109.66
3-Color Label	—	5.00	5.00
Bag Packing	1.00	—	—
Customer Outbound Freight (\$1.00/cwt.)	4.00	16.00	1.57
Customer Cost Excluding Caps.....	\$89.89	\$104.19	\$116.23
Shipping Weight Per M.....	400 lbs.	1,600 lbs.	157 lbs.

[fol. 913]

GOVERNMENT'S EXHIBIT 357.

List of Revlon Products March 1958 to October 1959

Ladies Line

- 1) Aqua Lotion, Glass & Plastic
- 2) Hi-Dri deodorant, Plastic
- 3) Aqua Bath Freshener, Glass
- 4) Clean and Clear Lotion, Glass
- 5) White Sable Face Cream, Glass
- 6) 7 Wonders Cream, Glass
- 7) Waking Beauty Cream, Glass
- 8) Touch and Glow Facial Makeup, Glass
- 9) Moondrops Lotion, Glass
- 10) Ultima Creams, Glass
- 11) Sunbath Suntan Lotion, Plastic
- 12) Aqua Shampoos, Glass & Plastic
- 13) Silicare Hand Lotion, Glass
- 14) Aerosol Hair Sprays, Cans
- 15) Nail Enamel and Treatment Line, Glass
- 16) Professional Line—Larger sizes of the above products in similar type containers: Glass

Mens Line

- 1) Top Brass Deodorant, Plastic
- 2) Top Brass Shaving Lotion, Glass
- 3) Top Brass Hair Dressing, Metal Tube

GOVERNMENT'S EXHIBIT 363

2470

Continental Can Co., Inc.
Hazel-Atlas Division

June 21, 1960.

By Plant and Serial Number as of July 31, 1958

Revised as of September 1, 1958

Plant	I.S. Ser. No.	Year Shipped	No. of Sections	Date Ordered	P.O. Number	Purchase Authorized by	Machine Ordered With:			
							62 S.G.	62 D.G.	B & B S.G.	B & B D.G.
Lancaster, New York.	1117	4/26/57	6	10/29/56	610-28214	Continental Can			X	X
	1118	4/26/57	6	10/29/56	610-28214	Continental Can	X		X	
	1127	4/30/57	6	2/13/57	451-164	Continental Can			X	X
	Total	—	—	18						
Montgomery, Ala.	1114	1/31/57	6	12/56	461-1	Continental Can	X	X	X	X
	1132	6/27/57	6	2/13/57	461-327	Continental Can	X	X	X	X
	Total	—	—	12						
Oakland, Calif.	81	1/14/38	4	—	—	Hazel-Atlas	—	—	—	—
	1133	7/24/57	6	2/14/57	441-238	Continental Can	X	X	—	—
	1134	7/22/57	6	2/14/57	441-238	Continental Can	X	X	X	X
Total	—	—	16							
Washington Plt. I.	885	5/21/54	5	—	—	Hazel-Atlas	—	—	—	—
	893	6/25/54	5	—	—	Hazel-Atlas	—	—	—	—
	1137	7/26/57	6	2/13/57	402-591	Continental Can	X	X	X	X
Total	—	—	16							

[fol. 915]

Plant	I.S. Ser. No.	Year Shipped	No. of Sections	Date Ordered	P. O. Number	Purchase Authorized by	Machine Ordered With:			
							62 S.G.	62 D.G.	B & B S.G.	B & B D.G.
Washington Plt. 2....	1082	9/27/56	6	4/23/56	610-11293	Hazel-Atlas	X	X		
	1083	9/27/56	6	4/23/56	610-11293	Hazel-Atlas	X	X		
	1084	9/27/56	6	4/23/56	610-11293	Hazel-Atlas	X	X		
	1107	3/14/57	6	6/13/56	610-16289*	Hazel-Atlas*	X	X		
	1108	3/28/57	6	6/13/56	610-16289*	Hazel-Atlas*	X	X		
	1109	4/2/57	6	6/13/56	610-16289*	Hazel-Atlas*	X	X		
	1116	6/28/57	6	10/29/56	610-28214	Continental Can			X	X
	1130	5/28/57	6	2/13/57	403-553	Continental Can	X	X	X	X
	1131	5/9/57	6	2/13/57	403-553	Continental Can	X	X		
Total	—	—	54							
Zanesville #1	164	8/29/40	4	—	—	Hazel-Atlas	—	—	—	—
[fols. 916-917]										
	41	4/17/35	4	—	—	Hazel-Atlas	—	—	—	—
	62	8/4/38	4	—	—	Hazel-Atlas	—	—	—	—
	68	2/2/37	4	—	—	Hazel-Atlas	—	—	—	—
	77	6/25/37	4	—	—	Hazel-Atlas	—	—	—	—
	80	1/11/38	4	—	—	Hazel-Atlas	—	—	—	—
	110	3/10/39	4	—	—	Hazel-Atlas	—	—	—	—
	114	4/24/39	4	—	—	Hazel-Atlas	—	—	—	—
	115	7/3/39	4	—	—	Hazel-Atlas	—	—	—	—
	124	3/6/40	4	—	—	Hazel-Atlas	—	—	—	—

*Initially ordered as shown. Confirming order issued by Continental Can.

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Plant	I.S. Ser. No.	Year Shipped	No. of Sections	Date Ordered	P. O. Number	Purchase Authorized by	Machine Ordered With:			
							62 S.G.	62 D.G.	B & B S.G.	B & B D.G.
Zanesville #1	125	3/4/40	4	—	—	Hazel-Atlas	—	—	—	—
	126	3/6/40	4	—	—	Hazel-Atlas	—	—	—	—
	430	6/25/48	5	—	—	Hazel-Atlas	—	—	—	—
	938	3/22/55	6	3/4/55	510-06187	Hazel-Atlas	—	—	X	X
	1020	3/22/56	6	1/9/56	610-428	Hazel-Atlas	—	—	X	X
	1021	3/26/56	6	1/9/56	610-428	Hazel-Atlas	—	—	X	X
	1112	1/24/57	6	12/14/56	610-28686	Continental Can	—	—	X	X
	1113	1/22/57	6	12/14/56	610-28685	Continental Can	—	—	X	X
	1115	5/31/57	6	12/18/56	610-28230	Continental Can	X	X	X	X
	1125	3/22/57	6	2/7/57	422-505	Continental Can	X	X	—	—
Total	—	—	91							
Plainfield, Ill.	975	7/31/56	6	8/22/55	510-22607	Hazel-Atlas	X	—	X	—
	976	6/18/56	6	8/22/55	510-22607	Hazel-Atlas	X	—	X	X
	977	6/29/56	6	8/22/55	510-22607	Hazel-Atlas	—	X	X	X
	1136	10/23/57	6	8/6/57	471-1194	Continental Can	X	X	X	X
Total	—	—	24							

[fol. 918]

GOVERNMENT'S EXHIBIT 364

Mr. McManus
Mr. Greenberg

Emhart Manufacturing Company
333 Homestead Avenue
Hartford 2, Connecticut

Cable Address: Emhart Hartford, Conn.

October 21, 1958.

United States Department of Justice
Antitrust Division
Washington, D. C.

Attention Mr. Samuel V. Greenberg

Re: Inquiry Concerning Glassware Forming Machines and
Related Subjects—Ref. VRH:GDR 60-0-37-129

Gentlemen:

In compliance with the requests of Mr. Samuel V. Greenberg presented at a conference held September 19 in the office of Cahill, Gordon, Reindel and Ohl, 63 Wall Street, New York, we are pleased to furnish the following information and material.

As stated at the conference, the following conditions apply to the material delivered herewith:

No material which is the property of a customer should be turned over to the Government without that customer's consent.

No material with respect to Continental Can or Owens-Illinois should be turned over to the Government unless simultaneously therewith copies of such material are furnished to those parties.

No material thus turned over should be introduced into court as evidence except pursuant to a subpoena.

The preparation of the material and the answers to questions has required much more time and effort than may be apparent. However, we are glad to answer the reasonable requests of the Government, and hope that the information

furnished will be helpful in developing the true facts concerning the production of glass containers.

(1) Hartford-Empire Forming Machines—Number at Each Company and Plant as of September 1, 1958.

The following lists are enclosed (in some cases the locations of machines may not be up to date):

I. S. Machines:

- Summary of leased and purchased machines.
- Summary by company, showing number of machines and number of sections for each company.
- List by plant, showing serial number, date of shipment, and number of sections.

"28" Machines:

- List by plant, showing serial number and date of shipment.

"65" Machines:

- List by plant, showing serial number, date of shipment, and number of sections.

(2) Forming Machines Shipped 1955-1957 to Owens-Illinois, Anchor Hocking, and Continental Can (Hazel-Atlas)

The following lists are enclosed:

- Summary of I. S. Machine shipments to these three companies.
- Individual lists for Owens-Illinois, Anchor Hocking, and Continental Can showing shipments by plant and other details.

Characteristics of Hartford-Empire Forming Machines.

The characteristics of Hartford-Empire I. S. Machines for making narrow neck and wide mouth ware and the "28" Machine for making paste mold ware are described in the following items, copies of which are enclosed:

The H-E I. S. Glass-Forming Machines—15-page brochure.

I. S. Machine and Conveyor—Questionnaire and Request for Estimated Price—Issue No. 2, March 26, 1954—26 pages.

Contains technical data supplementing above-mentioned brochure.

Specifications—HE-142 I. S. Press Attachment.

Hartford-Empire 28 Machine—4 page brochure.

Chart—Estimated Average Time for 6 Man Crew to Change Processes on a 6 Section I. S. Machine.

[fol. 920] The Hartford "65" Machine is similar to the I. S. Machine.

Characteristics of Machines Used by Owens-Illinois, Anchor-Hocking, and Continental Can.

All three companies make use of the convertible and versatile features of the I. S. Machine—that is, the double gob and the 62 Process for converting from blow and blow to press and blow or from press and blow to blow and blow.

Anchor Hocking and Owens-Illinois use the Hartford-Empire "28" Machine, but Continental Can does not.

(3) Other Companies' Machines

A list of such machines, showing characteristics, is enclosed.

Certain of the Lynch machines are equipped for double gob operation, and certain Lynch machines may be converted from narrow neck blow and blow to wide mouth blow and blow. But Lynch blow and blow machines cannot be converted to press and blow machines, nor is the converse true of Lynch press and blow machines.

The Knox WD machine is a blow and blow type which, so far as we know, is not convertible to press and blow or to double gob, but the Knox JK is convertible to double gob.

In general, machines of other companies are capable of producing merchantable glassware at economic speeds; but are not as versatile as to the range of weight and convertibility as is the Hartford-Empire I. S. Machine.

(4) Reconditioning of Machines

Although machines were occasionally reconditioned by Hartford-Empire years ago, substantially all reconditioning is now done, where necessary, by the users of the machines. When ordered by customers, Emhart furnishes parts and supervision service to assist in repairing, reconditioning, or modernizing machines.

(5) Continental's Plainfield Plant and Gallo's Plant

Emhart was not engaged to perform the engineering of Continental's Plainfield plant and has no data of the kind requested concerning it. It did furnish forming machines for this plant, as shown by the lists referred to in (1) and (2).

An estimate of plant costs furnished to Gallo is contained in Emhart's letter of December 4, 1956, copy of which is enclosed. Emhart designed the furnace and furnished the machines for this plant. It did not act as engineer for the plant and does not have final cost data.

[fol. 921] (6) Costs of New Plant or Plant Addition

For the reasons set forth below, there is no basic distinction between the cost of a new plant and the cost of a plant addition, nor is there any basic difference between the cost of a new plant of a new company and that of an established company. In each case, costs depend upon requirements and the particular circumstances.

No data concerning hypothetical costs of plants is available. Emhart does not attempt in practice to give hypothetical plant costs to manufacturers, but estimates costs of plants to produce specified types and volumes of ware on the basis of the following elements:

- Batch system
- Furnace
- Feeders
- Forming machines
- Lehrs
- Stackers
- Factory buildings
- Services—water, gas, fuel, electricity

**Warehousing and equipment therefor
Excluding cost of land and cost of excavations**

The elements upon which estimates are based all vary according to the requirements of volume and types of glassware to be produced and to variations in demand.

The Gallo letter referred to in (5) above is an example of the application of the foregoing.

(7) New Plants and Companies and Exits

The following lists are enclosed:

Glass Container Plants—New Companies Since 1950—
Exits from Field Since 1950

Glass Container Plants—New Plants or Plant Additions Since 1950—Existing Companies

(8) Development of New Machines

Emhart's new forming machine development is subject to the reservation regarding trade secrets, except for such recent improvements in the I. S. Machine as

Quick Change Conversion (see Questionnaire and Request for Estimated Price referred to under (2)—page 2)

Seamless Mold Attachment (see same, page 4)

Press Attachment (see Specifications—HE-142—referred to under (2))

[fol. 922] Emhart carries on a continuous research and development program for the improvement of its machines. Information regarding new or recent forming machine developments by other companies is contained in the enclosed list entitled

“Publications Referring to New Types of Machines Being Developed for Use of Glass Container Makers.”

(9) Activity of Hazel-Atlas

Any increased activity on the part of Hazel-Atlas in 1955 is revealed in the lists of shipments of forming machines referred to in (1) and (2).

(10) Relationship of Hazel-Atlas and Anchor Hocking Machines Before and After Merger

Here again, reference should be made to the lists of machine shipments, it being noted that Hazel-Atlas has at times employed large numbers of Lynch machines but that Emhart has no detailed information regarding these machines. Anchor Hocking has not been a substantial user of Lynch machines in recent years. See also comments under (2) above.

(11) Relationship of Machines for Cans, Glass, Plastic, Paper

So far as Emhart knows, the machines used for forming cans, glass, paper, and plastics, respectively, are separate and distinct and are in no way interchangeable.

(12) Breakdown of Machines by Makers

Emhart has no record of percentages of glass container machines of various types made by different makers.

(13) GCM

Emhart is not a member of Glass Container Manufacturers Institute, Inc. It is assumed that the Department has communicated or will communicate directly with this association.

(14) Glass Container Business Requirements

It is Emhart's opinion based on its experience that an essential requirement in entering the glass business is to obtain the services of at least one good man of executive or managerial caliber, experienced in the art of manufacturing glassware. A great deal of know-how is required, but the glass technology and engineering services of Emhart and others specializing in this industry are available. Machine operators are usually obtained from the unions. A large amount of capital is required. A real problem exists in finding a market for new production in competition with established manufacturers.

[fol. 923] (15) Convertibility of Packers' Machinery

The subject of the convertibility of packers' machinery for filling and closing is one on which Emhart has very little knowledge, not being engaged in this branch of industry. It is known that a certain amount of convertibility exists, but the character and extent of it are not known. See Modern Packaging Encyclopedia for 1957, page 440, picture of Triangle Package Machinery Co. referring to the handling of any style container, and page 486, Pneumatic Scale Company advertisements of machines for handling of (1) boxes, cans, or jars and (2) 1-ounce to 1-gallon bottles or cans.

Very truly yours, Emhart Manufacturing Company,
By John R. Hobson, Secretary.

JRH/mel

CC: Mr. Jerrold G. Van Cise, Cahill, Gordon, Reindel & Ohl, 63 Wall Street, New York 5, N. Y.

[fol. 924]

Hartford-Empire—I. S. Machines

September 30, 1958.

Summary of: Hartford-Empire I.S. Machines in Domestic Plants as of September 1, 1958***

Prepared from Company Records which in some instances may not be up to date.

	Leased		Purchased		Total	
	No. of Machines	No. of Sections	No. of Machines	No. of Sections	No. of Machines	No. of Sections
1 Section	—	—	3	3	3	3
2 Section	—	—	2	4	2	4
4 Section	17	68	86	344	103*	412
5 Section	100	500	329	1645	429**	2145
6 Section	16	96	175	1050	191	1146
Total	133	664	595	3046	728	3710
		18% Leased		82% Purchased		Total 100%

* Includes 11—8 Section Machines.

** Includes 15—10 Section Machines.

*** The letter "L" before the serial number on the following tabulations indicates that the machine is leased at the present time; otherwise, machine is a purchased machine. Many of the purchased machines were originally leased but later purchased by the customer.

MOA/eld

M. O. Ahearn, Sales Department.
9-30-58

[fol. 925] Summary of: Hartford-Empire
I. S. Machine by Company as of 7-31-58

Company	No. of Machines	No. of Sections
Anchor Hocking	113	561
Armstrong Cork	44	221
Ball Brothers	24	124
Brockway	35	190
Chattanooga	8	28
Class Containers	16	78
Continental	44	235
Kerr	4	23
Knox	3	14
Metro	17	90
Owens	202	1,028
Thatcher	43	227
All Others	175	881
Total	728	3,710

[fol. 926] Copies: Messrs. Cressy, McKinney,
Crouse, Powers, M. Ahearn (2), Central File

Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958
Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
American Thermos	57	5- 7-36	4
	L- 64	8-24-36	4
	L-109	6-23-39	4
	L-201	6-28-41	4
	L-236	6- 4-42	4
	L-272	6-12-42	4
			<hr/>
Anchor Hocking—Carr-Lowrey	6	2-27-28	24
	10	4- 9-28	4
	14	11- 2-29	4*
	15	11- 6-29	5
	28	6-27-33	4
	29	7- 6-33	4
	48	9- 6-35	4
	70	2-27-37	4
	71	3- 6-37	4*
	84	8-12-38	4
	85	8-12-38	4
	92	8-19-38	4*
	105	2-24-39	4*
	242	10-23-43	4
	1085	1-16-57	5
	1165	12-20-57	5*
			<hr/>
Anchor Hocking—Connellsville	22	10-14-31	67
	25	3-11-33	4
	27	5-25-33	5*
	593	4-26-47	5)
	72B	3-22-37	6*

*Equipped with Double Gob.

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Anchor Hocking— Connellsville (Cont'd.)	91	4-27-38	5
	119B	7-27-39	4
	172	12-11-40	5
	196	4- 2-41	5
	209	7-17-41	5*
	258	3-12-43	5*
	259	8- 3-45	5*
	262	10-27-45	5
	503	11-29-46	5
	421	5-10-46	5
	504	11-30-46	5*
	553	4-30-47	5*
	579	4-15-47	5*
	591	4-30-47	5
	592	1-20-47	5
	759	8-28-52	5*
	896	7-21-54	5*
	1023	3-28-56	6
	1095	11-23-56	6*
	1153	10-25-57	6*
	1154	10-31-57	6*
Anchor Hocking—Maywood	86	10-30-37	133
	93B	7- 7-38	5*
	117	7- 8-39	5*
	423	4-27-46	4
	808	3-31-53	5*
	881	4-29-54	5*

[fol. 927] Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958
 Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Anchor Hocking—Salem	33	3-21-34	5*
	72A	3-22-37	4
	90	3-15-38	6
	95	9- 9-38	5
	119A	7-27-39	5*
	130B	12-18-39	5
	760	7-30-52	5
	147	3-13-40	5
	150	6-21-40	5*
	169	10-22-40	5*
	194	3-26-41	4
	243	11- 1-41	5
	244	11- 8-41	4*
	256	2-20-43	5
	261	8-14-45	5*
	421	3-25-46	6
	422	3-25-46	6*
	505	12- 4-46	5*
	575	9-30-46	5
	576	1-21-47	5*
	577	1-28-47	5*
	594	5-17-47	5*
	761	7-30-52	5*
	762	8-29-52	5
	882	4-22-54	5
	883	4-23-54	5
	897	7-29-54	5
	898	8-31-54	5*
	914	2- 2-55	6
	1024	3-29-56	6

*Equipped with Double Gob.

Plant	I. S. / Serial Number	Year Shipment	No. of Sections
Anchor Hocking—Salem (Cont'd.)	1094	11-21-56	6*
	1097	2-27-57	6
	1138	7- 6-57	6*
			170
Anchor Hocking—Winchester	30	11- 1-33	5*
	39A	7-24-34	4*
	54	2-21-36	5*
	69	2-20-37	5
	104	1-16-39	5
	146	5- 3-40	5
	502	11-26-46	5
	151	6-21-40	5
	166	8-10-40	6
	167	8-31-40	5
	257	3- 6-43	5
	175	11-12-40	5*
	195	3-26-41	5
	263	11-10-45	5*
	479	1- 7-49	5
	603	1-25-49	5
	506	12-11-46	5*
	578	9-24-46	4*
	595	6-25-47	5*
	895	7-28-54	5
	913	2- 3-55	6
	1096	2- 2-57	6*
	1152	8-29-57	6

*Equipped with Double Gob.

[fol. 928] Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Anchor Hocking—Jacksonville.....	24	8-12-32	5
	87	11-13-37	5
	100	1- 6-39	5
	130A	12-18-39	5
	150A	6-21-40	5
	210	10-11-41	5
	260	10-20-45	5*
	486	6-27-47	5
	758	3- 6-52	5
Armstrong Cork—Dunkirk.....	141	3-20-40	45
	L-144	7-27-40	5*
	L-357	4-25-46	4
	L-358	4-25-46	5*
	L-359	4-25-46	5
	L-359	5-17-46	5
	L-508	3-20-47	5
	L-509	3-25-47	5*
	510	3-26-47	5*
	701	10-22-51	5
	702	12-21-51	5
	827	5-29-53	5
	857	2-24-54	5
	1158	1-30-58	6*
	1176	5-29-58	6
	1177	6-18-58	6

*Equipped with Double Gob.

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Armstrong Cork—Millville	46	7- 2-35	5
	97	9-30-38	4
	107	9- 8-39	4
	123	10- 7-39	5
	134	2- 3-40	5
	142	5- 7-40	5
	143	5-11-40	5
	155	7-27-40	6*
	L-156	9-10-40	4*
	158	9-10-40	6
	170	11-27-40	5*
	177	2- 5-41	6
	198	7-24-41	5
	200	8- 4-41	4
	202	2-28-41	4
	L-211	6-13-42	4
	L-232	9-17-43	4
	245	7-16-43	6
	246	7-24-43	6*
	247	8-14-43	5
	L-248	8-14-43	5*
	L-250	9-10-43	4
	L-360	5-22-46	5
	L-361	5-22-46	5
	L-511	2- 7-47	5
	699	11-30-51	5*
	700	1-30-52	5
	1161	4-18-58	6
	1174	5-22-58	6*

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*Equipped with Double Gob.

[fol. 929] Hartford-Empire—I. S. Machines

*By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Ball Brothers—El Monte	L-178	3-14-41	6
	L-582	4-9-47	6
	L-383	4-16-47	5*
	L-584	4-17-47	5
			<hr/>
Ball Brothers—Hillsboro	219	12-19-42	22
	L-226	1-16-43	6
	L-394	2-27-46	5
			<hr/>
Ball Brothers—Muncie	L-203	9-26-41	16
	L-225	1-2-43	4
	L-383	2-26-46	4
	L-395	2-26-46	5
	L-397	9-1-46	5*
	L-398	9-14-46	5
	L-711	11-26-51	5*
	L-712	11-27-51	5
	L-713	11-29-51	5
	L-714	11-30-51	5
	800	2-24-53	5*
	801	2-25-53	5
Ball Brothers—Okmulgee	802	2-27-53	5*
	L-996	11-28-53	6
			<hr/>
Ball Brothers—Okmulgee	218	12-19-42	69
	L-396	4-17-46	6
	886	10-18-54	5
			<hr/>
Brockway—Plant #1	102	3-1-39	17
	135	5-20-40	5*
	173	10-29-40	6
	321	2-2-46	6
	356	4-29-47	6
			<hr/>
Bartlett Collins	1135	8-30-57	28
			<hr/>

*Equipped with Double Gob.

[fol. 930] Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Brockway—Plant #2	174.	11- 8-40	5*
	270	12-13-43	5*
	328	1-28-47	5
	329	1-29-47	5
	338	2-27-47	5*
	339	2-27-47	5
	340	2-28-47	5*
	341	2-28-47	6
	342	3- 7-47	6*
	L-655	7-14-50	5
	L-673	11-30-51	5
	L-792	7-31-52	5
	.829	6-10-53	5
			67
Brockway—Plant #3	353	2- 6-46	5
	354	2- 6-46	5
	L-795	12- 2-52	5
	899	9-28-54	6
	900	9-30-54	6
			27
Brockway—Lapel	271	1-25-44	5*
	337	2-26-47	5
	L-654	7-14-50	5
	L-715	11-21-51	5
	901	12-20-55	6
	902	12-21-55	.6
			32
Brockway—Freehold	253	7- 2-43	6
	254	7- 2-43	6
	352	1-29-46	6
	355	5- 8-46	6
	998	2-16-56	6
	999	2-22-56	6
			36
Buck	61	6-19-36	6
	249	9-10-43	6
	116	3-31-39	4
	145	3-20-40	4
			20
Chattanooga—Tennessee	234	6-17-43	4
	252	6-17-43	4
	599	9-30-47	5
	906	9-30-54	5
	907	9-30-54	5
			5
Chattanooga—Corsicana, Texas	942	12-30-55	38
	943	12-30-55	5
			5
			10

*Equipped with Double Gob.

[fol. 931] Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1968

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Corning.....	47	7-12-35	4
	179	5- 7-41	4
	674	11-29-50	1
Diamond.....	34	8-15-34	9
	51	1- 7-36	5
	148	3-15-40	6*
	233	9-23-42	5*
	336	6- 7-45	4
	418	2-24-47	5
	949	8-31-55	5*
			5
Fairmount.....	161	5-29-40	35
	193	3- 5-41	5
	199	5-28-41	5*
	251	5-29-43	5
	324	11- 3-45	5
	807	2- 5-53	5
	867	3-25-54	5
	912	1-26-55	6
	969	10-20-55	6*
	1123	2-22-57	6*
	1213	7-29-58	6
Foster—Forbes.....	868	4-29-54	59
	937	3-15-55	5
	1015	3-26-56	6*
	1016	3-29-56	6*
	1162	12-16-57	6
	1178	7- 3-58	6
			6
Gallo.....	1140	9-10-57	35
	1141	9-18-57	6
	1142	10- 7-57	6
	1143	10-25-57	6
	1194	7-18-58	6
	1196	8-29-58	6
Gayner.....	40	1-26-35	36
	50	10- 7-35	4
	L-78	6-12-37	4
	L-264	2-13-43	4
	1160	6-19-58	4

*Equipped with Double Gob.

[fol. 932] Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Glass Containers—Antioch	55	3-13-36	6*
	346	12-16-46	5
	347	12-19-46	5
	348	12-27-46	5*
	406	12-30-46	5
	830	10-15-53	5*
			31
Glass Containers—Los Angeles	74	5-25-37	5
	189	3-18-41	4
	237	12- 4-41	5*
	308	5-19-44	4
	309	5-19-44	4
	407	12-30-46	5
	474	10-28-48	5*
	484	8-14-46	5*
	485	8-30-46	5
	692	11-23-51	5
			47
Glenshaw	978	9-29-55	5
	1139	9-26-57	6
			11
Gulfport	35	8-13-34	6
	162	10-30-40	6*
			12
Continental Can Co. Inc.			
Hazel-Atlas Division—			
Lancaster	1117	4-26-57	6
	1118	4-26-57	6
	1127	4-30-57	6
			18
Montgomery, Ala.	1114	1-31-57	6
	1132	6-27-57	6
			12
Oakland, Calif.	81	1-14-38	4
	1133	7-24-57	6
	1134	7-22-57	6
			16
Washington Plant #1	885	5-21-54	5
	893	6-25-54	5
	1137	7-26-57	6
			16*
Washington Plant #2	1082	9-27-56	6
	1083	9-27-56	6
	1084	9-27-56	6
	1107	3-14-57	6

*Equipped with Double Gob

[fol. 933] Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Washington Plant #2 (Cont'd.)	1108	3-28-57	6
	1109	4-2-57	6
	1116	6-28-57	6
	1130	5-28-57	6
	1131	5- 9-57	6
			<hr/>
Zanesville Plant #1	164	8-29-40	54
Zanesville Plant #2	41	4-17-35	4
	62	8- 4-36	4
	68	2- 2-37	4
	77	6-25-37	4
	80	1-11-38	4
	110	3-10-39	4
	114	4-24-39	4
	115	7- 3-39	4
	124	3- 6-40	4
	125	3- 4-40	4
	126	3- 6-40	4
	430	6-25-48	5
	938	3-22-55	6
	1020	3-22-56	6
	1021	3-26-56	6
	1112	1-24-57	6
	1113	1-22-57	6
	1115	5-31-57	6
	1125	3-22-57	6
			<hr/>
Continental Can Co., Inc.			91
Hazel-Atlas Division—			
Plainfield, Illinois	975	7-31-56	6
	976	6-18-56	6
	977	6-29-56	6
	1136	10-23-57	6
			<hr/>
Kerr-Huntington	313	5- 4-46	24
	1128	5-23-57	6
			<hr/>
Kerr-Santa Ana	315	4-25-46	12
	1129	6- 4-57	5
			<hr/>
Knox-Marienville	L-149	6-26-40	11
	L-501	4-29-46	5
			<hr/>
Knox-Knox	L-289	3-18-44	10
			<hr/>

*Equipped with Double Gob.

[fol. 934] Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Lamb.....	718	2- 6-52	5
	984	1-24-56	5
	1175	5-20-58	6
			16
Latchford.....	129	1-12-40	6
	152	3-29-40	4
	280	8-28-44	4
	284	2-19-44	4
	285	2-19-44	4
	287	1-18-46	5*
	288	1-18-46	5
	493	2-19-48	5
	894	10-21-54	6
			43
Laurens.....	168	12- 3-40	6
	220	10-15-43	6
	291	2-17-47	5
	292	2-19-47	5
	383	2-20-47	5*
	L-681	7-13-51	5
	L-703	12-21-51	5
	945	10-25-55	6
			43
Liberty.....	523	4-21-47	5
	524	4-21-47	5
	781	1-29-52	5*
	798	10-30-52	5*
	799	12-17-52	5
	L-970	11-11-55	5
	L-1157	2- 5-58	6
			36
Maryland.....	L-31	11- 3-33	4
	206	6-10-41	4
	52	1-23-36	5*
	82	9-14-37	5
	99	10-27-38	5
	121	8-21-39	6
	139	2- 8-40	5
	159	5-22-40	6
	37	11-27-34	5*
	221	3- 4-44	6
	241	3- 4-44	4
	399	12-18-45	5
	400	7- 8-46	5
	401	7- 7-48	5
	L-626	1- 9-50	5
	L-669	7-16-52	5
	L-851	1-21-54	5*
	L-908	1-13-55	5
			90

*Equipped with Double Gob.

[fol. 935] Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Metro-Jersey City, N. J.	38	1-15-35	4
	127	12- 5-39	4
	98	11- 4-38	4
	128	12- 5-39	4
	137	4-17-40	4
	848	1-29-54	6
	971	10-31-55	6
	972	12- 2-55	6
	973	12-19-55	6
	974	11-29-55	6
	988	11- 1-56	6
	1163	12-19-57	5
	1164	12-19-57	5
			66
Metro-Dolton, Illinois	879	9-27-54	6
	909	12-23-54	6
	910	11- 5-54	6
	980	11-15-56	6
			24
Northwestern.....	157	5-15-40	5
	188	3-14-41	6
	265	1-25-43	5
	335	5- 3-46	5
	349	3-30-45	6
	601	4-25-47	5
			32
Obear-Nester.....	828	4-30-53	5
	980	9-28-55	5
	979	9-30-55	5
			15
Oil City.....	11	8-30-28	4
	53	3- 3-36	4
	936	4-29-55	5
	1195	8- 1-58	5
			18
Owens-Illinois—Alton	122	9-21-39	2
	204	10-21-41	4
	296	7-20-44	5
	370	3-30-46	5
	372	3-30-46	5
	373	7-31-46	5
	374	8- 3-46	5
	375	8-23-46	5
	379	9-30-46	5
	408	10-26-46	5
	L-611	7-15-47	5
	L-612	7- 1-47	5
	614	7-31-47	5
	651	7- 7-50	5

*Equipped with Double Gob.

[fol. 936] Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Owens-Illinois—Allon (Cont'd.)	L-684	6-25-51	5*
	L-685	6-22-51	5*
	690	9-27-51	5
	L-740	7- 3-52	5*
	L-741	7-24-52	5*
	L-742	7-25-52	5
	L-743	9-10-52	5*
	L-744	9-12-52	5
	L-745	9-23-52	5
	813	7-29-53	5*
	816	10-20-53	5
	817	9-29-53	5*
	819	10-29-53	5
			131
Owens-Illinois—Atlanta, Georgia	676	5-17-51	5
	L-739	7- 3-52	5
	953	1-25-56	6
	954	1-25-56	6
	955	1-25-56	6
	956	1-30-56	6
	957	1-31-56	6*
	958	3-12-56	6*
	960	2-24-56	6
	961	2-24-56	6
	962	4-25-56	6*
	963	4-25-56	6
	964	4-30-56	6
	965	4-30-56	6
	966	5-24-56	6
			88
Owens-Illinois—Bridgeton, N. J.	411	7-23-46	5*
	302	6-26-45	5
	822	11-18-53	5
	871	5-28-54	6
	872	5-28-54	6
	873	6- 4-54	6
	874	6- 9-54	6
	875	6-23-54	6*
	876	6-25-54	6*
	877	6-30-54	6*
	878	6-30-54	6*
	887	10-28-54	6
	888	10-28-54	6*
	889	11-30-54	6
	890	11-30-54	6*
	891	11-30-54	6*
	892	12- 8-54	6

*Equipped with Double Gob.

Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Owens-Illinois-Clarion	180	2- 1-41	5
	184	1-24-41	5
	186	5-16-41	5*
	300	2-14-46	5
	303	7-26-45	5*
	368	3-28-46	5
	460	6-22-46	5*
	L-615	6-26-47	5
	L-638	4-27-50	5
[fol. 937]			
Owens-Illinois-Clarion (Cont'd.)	678	6-30-51	5
	L-688	9-28-51	5
	691	5-11-51	5
	815	9-29-53	5*
	824	11-27-53	5*
	820	10-30-53	5*
			75
Owens-Illinois-Huntington	153	8- 2-40	4*
	154	8- 2-40	4*
	160	8-22-40	4*
	183	1-17-41	4*
	181	2- 1-41	4*
	222	4-15-43	4*
	182	5- 3-41	4
	187	5-16-41	4
	212	4-24-43	4*
	214	5-15-43	4*
	215	5-22-43	4*
	277	2-17-45	4*
	298	2-19-46	5
	299	2-12-46	5*
	301	3-23-46	5*
	369	8-30-46	5*
	414	5-29-46	5*
	413	8- 2-46	5
	416	5-31-46	5
	417	7- 2-46	5

*Equipped with Double Gob.

Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Owens-Illinois—			
Huntington (Cont'd.)	432	7-25-46	5*
	461	6-29-46	5*
	462	6-29-46	5
	L-565	10-29-46	5
	L-609	7-25-47	5
	610	6-27-47	5*
	L-616	7-28-47	5
	650	9-11-50	5
	671	7-26-51	5
	675	6-12-51	5*
	677	5-31-51	5*
	679	7-25-51	5
	680	8-28-51	5*
	L-683	8-31-51	5
	L-687	7-31-51	5*
	811	6-19-53	5
	812	6-25-53	5
	825	1-27-54	6*
			179
Owens-Illinois—			
Kimble (Chicago Heights)	36	11-27-34	4
	75	6- 2-37	4
	203	7- 3-41	4
	307	2- 9-44	5
	351	5-17-45	5
	507	3-13-47	5
	751	5-29-52	5
	823	11-23-53	5

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*Equipped with Double Gob.

[fol. 938] Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Owens-Illinois			
Kimble (Toledo).....	429	4-30-48	2
Owens-Illinois—Los Angeles.....	133	1-27-40	5*
	138	8-29-40	5*
	165	8-29-40	5
	185	5- 3-41	4
	275	6-30-44	5*
	295	5-12-45	5
	L-436	11-23-46	5
	L-456	11-22-46	5
	471	5- 6-48	5
	L-618	8-18-47	5*
	L-662	3-21-51	5*
	L-724	12-28-51	5
	L-725	12-31-51	5*
	726	11-29-51	5*
	985	6-27-56	6*
			75
Owens-Illinois—Oakland.....	207	8-20-41	5*
	208	8-20-41	5
	213	5- 6-43	5
	224	8-15-42	5
	230	10- 1-42	5
	274	4-28-44	5*
	276	6-30-44	6*
	294	2-17-45	6*
	377	6- 8-46	5
	378	6- 8-46	5
	380	6-29-46	5*
	381	7- 2-46	5*
	385	9-18-46	5*
	L-435	11-22-46	5
	455	10-25-46	5
	468	3-24-48	5*
	469	3-24-48	5
	L-520	3- 2-48	5*
	643	4-20-50	5*
	L-661	4-20-51	5*
	670	9-29-51	5*
	727	12-28-51	5*
	821	11-17-53	5*
	946	10-25-55	6*
	947	10-31-55	6
	986	6-29-56	6*
	1087	12-28-56	6
			141
Owens-Illinois—Streator.....	266	6-20-45	5
	297	3-23-46	5*
	312	8-30-45	5
	412	7-22-46	5
	458	11-12-46	5

*Equipped with Double Gob.

Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
	459	11-13-46	5
	637	4-27-50	5
	652	7-24-50	5*
	682	9-19-51	5
[fol. 939]			
	L-686	9-21-51	5*
	L-737	6-25-52	5
	L-738	6-30-52	5
	L-747	9-25-52	5
	810	6-16-53	5*
	818	10-22-53	5
	959	3-28-56	6
	967	5-24-56	6
	987	7-27-56	6
	1079	8-31-56	6*
	1080	9-26-56	6
	1081	10-17-56	6*
			111
Owens-Illinois—Portland, Oregon	56	4-15-36	5
	L-290	9- 6-45	5
	376	6- 1-46	5
	L-382	8-31-46	5*
	384	5- 2-46	5*
	386	9-20-46	5*
			30
Owens-Illinois—Waco	304	9-17-45	5
	371	3-30-46	5*
	457	11-13-46	5*
	L-613	6-28-47	5
	L-617	7-31-47	5
	653	7-20-50	5*
	689	9-12-51	5*
	746	4-30-52	5*
	L-748	5- 8-52	5
	L-749	5-14-52	5
	L-750	5-22-52	5*
	814	8-12-53	5*
			60
Phoenix-Monaca	L-367	11-28-45	4
Star City	1046	10-25-56	6
Thatcher-Elmira	190	5-13-41	4
	191	5-13-41	4
	216	1-19-42	5*
	235	5-23-42	5
	278	12-31-43	6
	L-316	7-29-46	5
	L-320	1-11-46	5
	L-322	7-11-46	5
	L-323	5-17-47	5

*Equipped with Double Gob.

Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections
	513	9- 2-47	5*
	L-697	10-31-51	5
	L-698	10-31-51	5
	L-859	3- 9-54	5*
	L-860	2-25-54	5
	L-869	6-29-54	6*
	L-870	7-27-54	6*
	L-1032	5-29-56	6
	L-1033	5-31-56	6
			93
Thatcher-Lawrenceburg.....	305	12- 6-43	6
	L-318	4- 6-46	5
	L-343	5-20-47	5
	345	5-24-48	5
	L-695	10-22-51	5*
	L-1093	4-11-57	6
			32
Thatcher-McKee.....	L-317	7-25-46	5
	L-656	7-20-50	5
			10
Thatcher-Saugus, California.....	78	7- 8-37	6
	L-514	8-29-47	5
	517	5-26-47	5*
	L-1025	7-20-56	6*
	L-1026	7-25-56	6
			28
Thatcher-Streator.....	268	4- 9-45	5
	269	4-20-45	5
	279	12-31-43	6
	310	10-13-45	5
	311	10-13-45	5
	319	12- 6-45	5*
	L-344	5-25-48	5
	L-515	9-26-47	5
	539	10-25-46	6
	L-696	10-25-51	5*
	L-911	1- 7-55	6*
	L-944	7-15-55	6
			64
Tygart Valley.....	518	5- 7-49	5
	630	3-27-50	5
	L-716	1-29-52	5
	717	2- 6-52	5*
	L-796	11-28-52	5
	L-797	12-17-52	5
	L-905	1-10-55	6
	L-915	3-16-55	6
	983	10- 1-55	6
	L-1155	2-17-58	6
			54

*Equipped with Double Gob.

[fol. 941] Puerto Rico & Canadian Plants—I. S. Machines

Revised September 1, 1958

Plant	I. S. Serial Number	No. of Sections
Dominion-Hamilton	108	6
	163	6
	326	5
	466	5
	467	5
	478	5
	551	5*
	607	5
	608	5
	705	5
	730	5
	804	5
	805	5
	852	5
	992	6
	993	6
		—
Dominion-Pt. St. Charles	325	84
	477	6
	552	5
	627	6
	628	5
	629	6
	645	5
	646	6
	704	5
	728	5
	729	5
	803	5*
	865	6
	866	6
	994	6
	1031	6
		—
Dominion-Redcliff	420	89
	427	5
	990	6
	991	6
	644	6*
	706	5
	732	5
	861	6
		—
		44
Total Dominion		
23-5 Section	115	
17-6 Section	102	
	—	
40	217	
Puerto Rico	941	5*
	1103	5
	1104	—
	1105	5
		—
		20

*Equipped with Double Gob.

[fol. 942] Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1938

Revised September 1, 1938

Plant	I. S. Serial Number	Year Shipment	No. of Sections
Universal.....	L-463	12-18-46	5
	L-464	12-23-46	5
	L-554	6-28-47	5
	L-793	3-18-53	5
			<hr/> 20
United Can & Glass.....	83	10-16-37	6*
	475	10-28-48	5*
	625	1-25-50	5
	650	2- 8-51	5
	660	2-21-51	5
	806	1- 6-53	5*
			<hr/> 31
Wheaton, T. C.....	26	3- 3-34	4
	88	2- 3-38	1
	101	4-11-39	5
	197	6-25-41	4
	217	9-15-41	5
	255	10-25-41	5
	281	5-18-43	1
	282	4- 3-43	5
	286	6-19-43	5
	306	1-19-44	4
	327	3-27-45	5
	334	10- 3-45	5
	350	11-20-45	5
	366	11-20-45	5
	438	9-21-46	5
	439	9-26-46	5
	440	9-28-46	5
	441	9-30-46	5
	442	9-30-46	5
	521	3-31-48	5
	522	3-31-48	5
	622	1-20-50	5
	623	1-20-50	5
	639	7- 3-50	5
	640	6-21-50	5
	641	6-28-50	5
	642	6-29-50	5
	665	11-25-50	5
	666	12- 4-50	5
	667	12-29-50	5
	723	2-14-51	5
	752	3-28-52	5
	753	4-8-52	5
	754	4-17-52	5
	755	4-18-52	5
	756	4-24-52	5
	880	7-30-54	6
	903	9-30-54	6
	939	4-25-55	6
	1027	5- 7-56	6
	1028	6-19-56	6
	1029	6-25-56	6
			<hr/> 205

*Equipped with Double Gob.

[fol. 943]

Summary

Hartford-Empire—I. S. Machines

By Plant & Serial Number as of July 31, 1958

Revised September 1, 1958

Plant	I. S. Serial Number	Year Shipment	No. of Sections	No. of Machines	Total	No. of Sections
Hartford Exp.	763	6-18-51	1	3	1 Section	3
	1034	7-24-56	5	2	2 Section	4
				81	4 Section	324
				399	5 Section	1995
				191	6 Section	1146
				11	8 Section	88
				15	10 Section	150
				<u>702</u>		<u>3710</u>

M. O. Ahearn,
Sales Department 9-30-58

[fol. 944]

Hartford "28" Machines

In Domestic Plants as of 9-1-58*

12-Head Machines

Plant	Serial Number	Year Shipment
Anchor Hocking, Lancaster #1	1	6-33
	2	6-20-33
	4	12-7-39
	9	3-21-46
	19	2-11-49
	22	12-23-48
	23	12-47
	24	8-26-48
	27	2-24-50
	28	3-17-50
Bartlett-Collins	6	3-7-42
	L 10	1-10-46
	L 21	6-18-48
Corning, Charleroi	29	1-31-51
Federal	3	5-26-39
	5	11-26-41
	8	11-7-45
	11	9-27-46
	45	2-28-58
Owens-Illinois—Libbey	7	9-21-45
	L 13	2-6-47
	L 14	3-25-47
	L 16	10-24-47
	L 17	4-30-48
Total All Plants 24		

L—The letter "L" before the serial number indicates that the machine is leased at the present time; otherwise machine is a purchased machine. A portion of the purchased machines were originally leased, but later purchased by the customer.
 *Prepared from company records which in some instances may not be up-to-date.

[fol. 945] Hartford-Empire "65" Machines

In Domestic Plants as 9-1-58

Plant	Serial No.	Year Shipment	No. of Sections
Anchor-Hocking, Winchester	1	1-24-50	4
Owens-Illinois, Oakland	2	1-8-53	6

[fol. 946] Summary of I. S. Machine Shipments

Owens-Illinois, Anchor Hocking & Continental Can
1955, 1956 and 1957

	Year	No. of Machines	No. of Sections
Owens-Illinois	1955	2	12
	1956	21	126
	1957	0	0
	Total	23	138
Anchor Hocking	1955	2	12
	1956	2	12
	1957	6	36
	Total	10	60
Continental Can	1955	1	6
	1956	8	48
	1957	19	114
	Total	28	168

[fol. 947]

I. S. Machine Shipments To Owens-Illinois

1955, 1956, and 1957

-2506

I. S. Machine Shipments To Owens-Illinois
1955, 1956, and 1957

Company	Plant	Section	Serial No.	Date Shipped	"62" S.G.	"62" D.G.	B&G S.G.	B&G D.G.	Leased	Purchased
Owens-Illinois	Oakland	6	946	10-28-55			x	x		x
Owens-Illinois	Oakland	6	947	10-31-55			x	x		x
Total 1955—2 Machines—12 Sections										
Owens-Illinois	Los Angeles	6	985	6-27-56			x			x
Owens-Illinois	Oakland	6	986	6-29-56			x			x
Owens-Illinois	Oakland	6	1087	12-28-56			x	x		x
Owens-Illinois	Atlanta	6	953	1-25-56			x			x
Owens-Illinois	Atlanta	6	954	1-25-56			x			x
Owens-Illinois	Atlanta	6	955	1-25-56			x			x
Owens-Illinois	Atlanta	6	956	1-30-56			x			x
Owens-Illinois	Atlanta	6	957	1-31-56			x			x
Owens-Illinois	Atlanta	6	960	2-24-56			x			x
Owens-Illinois	Atlanta	6	961	2-24-56			x			x
Owens-Illinois	Atlanta	6	958	3-12-56			x			x
Owens-Illinois	Atlanta	6	959	3-28-56			x			x
Owens-Illinois	Atlanta	6	962	4-25-56			x			x
Owens-Illinois	Atlanta	6	963	4-25-56			x			x
Owens-Illinois	Atlanta	6	964	4-30-56			x			x
Owens-Illinois	Atlanta	6	965	4-30-56			x			x
Owens-Illinois	Atlanta	6	966	5-24-56			x			x

[fol. 948]

Owens-Illinois	Atlanta	6	967	5-24-56			x			x
Owens-Illinois	Streator	6	987	7-27-56			x			x
Owens-Illinois	Streator	6	1079	8-31-56			x			x
Owens-Illinois	Streator	6	1080	9-26-56			x			x
Total 1956—21 Machines—126 Sections										
Total 1957—0 Machines—0 Sections										

[fol. 949]

I. S. Machine Shipments to Anchor Hocking 1955, 1956, and 1957

I. S. Machine Shipments To Owens-Illinois
1955, 1956, and 1957

Company	Plant	Section	Serial No.	Date Shipped	"62" S.G.	"62" D.G.	B&G S.G.	B&G D.G.	Leased	Purchased
Anchor Hocking	Salem	6	914	2-2-55			x			x
Anchor Hocking	Winchester	6	913	2-3-55			x			x
Total 1955—2 Machines—12 Sections										
Anchor Hocking	Connellsville	6	1023	3-28-56			x			x
Anchor Hocking	Salem	6	1024	3-29-56			x	x		x
Total 1956—2 Machines—12 Sections										
Anchor Hocking	Winchester	6	1096	2-22-57			x	x		x
Anchor Hocking	Salem	6	1097	2-27-57			x			x
Anchor Hocking	Salem	6	1138	7-6-57			x	x		x
Anchor Hocking	Winchester	6	1152	8-29-57			x			x
Anchor Hocking	Connellsville	6	1154	10-31-57			x	x		x
Anchor Hocking	Connellsville	6	1153	10-25-57			x	x		x
Total 1957—6 Machines—36 Sections										

[fol. 952] Estimated Average Time for 6 Man Crew to Change Processes on a 6 Section
I. S. Machine

From	Single Gob Blow & Blow		Single Gob "62"		Double Gob Blow & Blow		Double Gob "62"		Quick Change Single Gob Blow & Blow		Quick Change Double Gob "62"	
	Man Hours	Elapsed Time	Man Hours	Elapsed Time	Man Hours	Elapsed Time	Man Hours	Elapsed Time	Man Hours	Elapsed Time	Man Hours	Elapsed Time
Single Gob Blow & Blow			*35½	*6	*88¾	*21	*151¾	*31¾				
Single Gob "62"	*15	*3	15	3	*36	*7¾	*57½	*13¾				
Double Gob Blow & Blow	33	7¾	*72	*15½	42	7¾	*66	*14½	1½	¼		
Double Gob "62"	51½	10¾	*90	*19¾	*22¾	*4¾	*21½	*5½	1½	¼		
Single Gob Blow & Blow			57½	12	22¾	4¾						
Quick Change Double Gob Blow & Blow	51½	10¾	1½	¼							1½	¼
Quick Change Single Gob Blow & Blow							1½	¼				

*Data Applies to First Installation Only.

The above figures do not include time for Job Changes, which are estimated at an average of 1½ hours.
October 8, 1958

2510

[fol. 953]

Listing and Characteristics of Other Companies' Machines

	Blow & Blow	Single Gob Press & Blow	Press	Double Gob Blow & Blow	Press & Blow
Lynch B.....	x				
Lynch LA.....	x				
Lynch 10.....	x			x	
Lynch 16.....	x			x	
Lynch JP.....		x			
Lynch JPL.....		x			
Lynch JPM.....		x			
Lynch JPS.....		x			
Knox JK.....		x			
Lynch MB.....		x			
Lynch MPLS.....			x		
Knox WD.....	x				
Lynch MDP.....			x		

[fol. 954]

December 4, 1956.

Air Mail

Mr. Ernest Gallo, President
Gallo Wine Company
Modesto, California

Subject: Estimated Cost of Glass Plant

Dear Mr. Gallo:

Attached are an estimate for the cost of constructing a four-shop glass plant capable of producing somewhat more than 40,000 tons of glass per year, and a preliminary layout drawing #703-D-4063. The estimate and the layout are based on our discussion of specifications November 27.

The drawing 703-D-4063 shows the main plant area. It consists of a corrugated iron building 110 feet wide by 240 feet long. In addition to this building, there would be added a warehouse building of 53,000 square feet and general service and office space of 4,800 square feet. The office space and service building can be provided by a lean-to on one side of the manufacturing building. Other features not shown are a mezzanine for handling of cans and a mezzanine charging platform at the rear of the glass melting furnace. At the rear or side of the furnace, there would be a batch plant of cylindrical shape for handling 200 tons of batch per day.

The melting furnace is 22 feet wide by 38 feet long making a melting area of 836 square feet. At a melting rate of six square feet per ton per day, this will provide almost 140 tons. It will be capable of producing at five square feet per ton per day, equivalent to 167 tons. Under very favorable conditions, it would be possible to produce 210 tons per day but this would depend on skill of operation and on control of raw materials and glass.

Fuel requirements for the furnace are conservatively estimated at 552,000 cubic feet per day plus 4,800 cubic feet for each ton of glass melted per day. At 140 tons the fuel consumption would be 1,223,000 cubic feet per day or a little less than 9,000 cubic feet per ton. On the basis of results obtained in furnaces designed by us during the last five years, the fuel consumption should be considerably below our estimate, possibly as much as fifteen per cent. Properly constructed, the furnace should operate at least three years before need of repair, and with good maintenance and operation, may be expected to last four years. After three years of operation, the repair costs would be estimated at approximately \$250,000 making the furnace cost, based on 40,000 tons per year, approximately \$2.00 per ton.

[fol. 955] The production equipment consists of four Type 144 Feeders, four 6-Section I. S. Machines, two of which are arranged for double gob operation, and the necessary stackers and lehrs. The following is a tabulation of production requirements and schedules based on the information which you gave us.

Bottle	Capacity	Weight	6-Section Speed	Tons/ds.	Gross/ds. 87% pack	Required Gr.	Days
1/10th Qt. D.G.	12.8 oz.	8 $\frac{3}{4}$ oz.	84	33	730	133,333	183
Pint (flask) S.G.	16 oz.	11 oz.	47	23	410	133,333	325
4/5th Qt. D.G.	25.6 oz.	13 $\frac{1}{4}$ oz.	58	35	500	202,083	405
Quart S.G.	32 oz.	14 $\frac{1}{2}$ oz.	42	27	360	58,334	162
Half Gallon S.G.	64 oz.	29 oz.	31	41	270	57,500	213
Gallon S.G.	128 oz.	45 $\frac{1}{4}$ oz.	20	41	170	18,889	111

According to this tabulation, double gob operation amounts to 405 days for 4/5th quart plus 183 days for the 1/10th quart or a total of 588 days. Single gob operation amounts to 325 days for the pint plus 162 days for the quart plus 213 days for the half gallon, 111 for the gallon or a total of 811 days. The total machine days is 1399 which with 4 shops on the furnace accounts for 350 operating days.

Based on 350 operating days per year, the scheduling of jobs would be about as follows:

Shop #1	4/5th quarts D. G.	350 days	35 tons/day
Shop #2	Half Gallons	213 days	41 tons
	Gallons	111 days	41 tons
	Quarts	26 days	27 tons
Shop #3	Pints	325 days	23 tons
	Quarts	25 days	27 tons
Shop #4	4/5th Quarts D. G.	55 days	35 tons
	1/10th Quarts D. G.	183 days	33 tons
	Quarts S. G.	112 days	27 tons

The maximum tonnage with this scheduling would be $35 + 41 + 27 + 35$ or 138 tons per day. Minimum tonnage would be $35 + 27 + 23 + 27$ or 112 tons per day. If gallons and half gallons were made on separate shops, the maximum tonnage would be 152 tons.

With the addition of a 5th shop, the maximum tonnage could be $138 + 23$ or 161 tons. If the 5th shop is used for additional production of gallons or half gallons, the maximum tonnage could be $138 + 41$ or 179 tons. This would require furnace operation at 4.7 square feet per ton per day which should be easily attained.

[fol. 956] The general approach has been to design the plant so as to provide reasonable operating efficiency with the four shops needed in the beginning, and to provide also for melting an adequate supply of glass when the 5th shop is added.

For handling of cartons we propose a mezzanine floor equipped with carton sealers and delivery conveyors extending to the packing table on eachlehr. Delivery of cartons to the mezzanines would be by service elevator or by high lift trucks.

Warehousing is based on 10,000 square feet per shop. This is small for normal commercial operation, but we be-

lieve it to be adequate considering the additional warehouse space available in your present operations.

We estimate that the work force for this size plant would be a minimum of 150 people and it might be as large as 200.

Hartford-Empire Company is equipped to supply all of the engineering, design, and specifications for this plant. In addition, Hartford can supply supervision of construction, installation and start-up of operation. Charges for engineering services, consisting of plant layout, general specifications, design of furnace and specifications of all auxiliary equipment would be \$55,000 to \$65,000 depending on the amount of detail required. An outline of the engineering services would be submitted in the form of a Letter Agreement.

Cost of supervision would be on the basis of man days at established rates, plus transportation and living expenses at cost. For installation of Hartford-Empire equipment, supervision is at the rate of \$6.25 per hour, and for operating service the charge is \$80.00 per day. For general supervision, involving construction of the furnace, and general plant work, the current rate is \$80.00 per day. These figures are, of course, subject to change.

In addition to employing our engineering services, it would be advisable for you to employ a general engineering supervisor, who might be the ultimate Plant Manager, to organize drawings, confer with contractors and schedule purchasing and delivery of equipment.

Elapsed time for completing a project such as this is estimated at eighteen months. If plant location, layouts and requirements can be established quickly, it might be possible to shorten the time several months.

[fol. 957] We are indeed pleased that you have called on us for this preliminary information and trust that it is sufficient in detail to allow you to reach a decision and to establish budgets. Because our Glass Plant Engineering Section is very busy at present with the design of one complete new plant and with furnace designs and revisions for several others, there will be a problem in scheduling the work of our engineers. However, by the time all of the preliminary details are established, we should be in position to

schedule work for your plant without delay. If further information is needed, we shall be glad to supply it.

Sincerely yours, A. K. Lyle, Technical Manager.

AKL/jhm

Encl.

[fol. 958]

A Batch Plant—200 Tons Batch Material/Day

Track Hopper	
Power Scoop	
Cullet Crusher	
Elevator—Raw Material	
Storage Silo	
Weigh Hopper	
Beam Scale	
Batch Mixer	
Elevator—Mixed Batch	
Belt Conveyor	
Storage Bins	\$200,000

B. 836 Sq. Ft. Melting Furnace by formula—

$836 \times \$440 = \$367,840 \pm \text{Fixed}$
 Portion $\frac{50,000}{50,000}$
 $= 417,840$ Use 420,000

C. Buildings

Office.....24' x 100' = 2,400 Sq. Ft.	
@ \$10.00	\$ 24,000
Service Building...24' x 100' = 2,400-Sq. Ft.	
@ \$8.00	\$ 19,200
Furnace & Lehr Building..240' x 110' = 26,400	
@ \$8.00/Sq. Ft.	\$211,200
Mezzanines for above	
Rear.....40' x 110' = 4,400 Sq. Ft.	
@ \$4.50	\$ 19,800
Front.....20' x 110' = 2,200 Sq. Ft.	
@ \$6.50	\$ 14,300
	6,600 Sq. Ft.
Warehouse.....480' x 110' = 52,800	
@ \$8.00/Sq. Ft.	\$422,400
Office Furnishings..24' x 100' = 2,400 Sq. Ft.	
@ \$2.00	\$ 4,800
	<hr/> \$715,700

[fol. 959] Summary of Estimated Investment
4—Shop Glass Container Plant

		Total
A	1 Batch Plant	\$ 200,000
B	1 Glass Melting Furnace 536 Sq. Ft. (22438)	420,000
C	Factory Building	715,700
D	Hartford-Empire Production Equipment (Schedule I)	769,640
E	Carton Making and Conveying Equipment	25,000
F	Compressed Air and Fan Equipment	94,500
G	General Service Equipment	250,000
H	Mold Repair Shop Equipment	85,000
I	Warehouse Equipment	28,000
J	Bottling Testing & Laboratory Equipment	10,000
K	Molds for 6-Section Machines	20,000
	Total Items A-K—Estimated	\$2,617,840
	Contingencies at 10%	261,784
	Total Items A-K with Contingencies	2,879,624
	Purchasing Expense	85,000
	Engineering Design and Installation Supervision @ Approximately 5% Total Items A-K	143,981
	Grand Total	\$3,108,605

[fol. 960] Hartford-Empire Production
Equipment

Per 703 D-4063

		Estimated Sales Price
D	2 Class 144 Feeders, Single Gob 14' 7½" KW Forehearth—Deep Spout	\$19,934 \$ 39,908
	2 Class 144 Feeders Double Gob 16' 7½" KW Forehearth—Deep Spout	\$21,351 \$ 42,702
	2 6-Section I.S. Machines S.G. B & B	\$87,347 \$174,694
	2 6-Section I.S. Machines D.G. B & B	\$91,944 \$183,888
	4 6-Section S.D.P. Conveyor 8' 11¼" Extension	\$ 8,332 \$ 33,328
	4 6' Gang Stackers with Ware, Transfer & Cross Conveyor	\$11,679 \$ 46,716
	4 70" Type 125 Lehrs—Thermal Shock	\$34,750 \$139,024
	Total A	\$600,260
	1 Set Fixtures & Spares	\$ 30,000
	Total B	\$690,260
	Installation and Freight Estimated @ 11.5%	\$ 79,380
	Total	\$769,640

[fol. 961]

E	Glue, Sealers & Conveyor Equipment	\$ 25,000
F	Compressors & Fans 5—125 H.P. Compressors with gas engines, after coolers, - filters, traps and receiver Piping 4—60 H.P. Mold Cooling Fans Feeder Platform Installation Total	\$ 94,500

[fol. 962]

G	General Service Equipment—Installed Price	
	Gas Regulating and Metering Equipment	
	Auxiliary Generating Equipment—Rated 100 KVA—	
	Gas Engine Drive	
	Site Improvement, Sidewalks, Lawn, etc.	
	Transformer Substation & Switch Gear	
	Power Line Tie In	
	High Side Switch	
	Plant Power & Lighting	
	Office & Warehouse Lighting	
	Well and Pump Station	
	All Plumbing including Fixtures	
	Sewer Lines, Sanitary & Storm Sewers	
	600 Lineal Ft. Roadway 20' Wide	
	2,300' Fence	
	Estimated Total	\$250,000

[fol. 963]

		Estimated Cost
H	Equipment	
	Universal Type Milling Machine	
	Drill Press—1-2 Spindle	
	Lathes—3—1 with contour turning attachment	
	Mold Cleaning Unit	
	Polishing Machines—2	
	Grinders—2	
	Gorton Duplicating Machine	
	Mold Inspection Equipment	
	Small Tools	
	Jigs & Fixtures	
	Hand Tools	
	Power Hack Saw	
	Welding Torch	
	Total	\$ 85,000
I	Warehouse Equipment	
	Lift Trucks	
	Pallets	
	Total	\$ 28,000
J	Process and Control	
	Bottle Cutting Machine	
	Thermal Shock	
	Hydrostatic Pressure Testing	
	Ring Section Polarizing Microscope, Density Comparator,	
	Capacity Measuring Equipment and Bottle Gaging Equipment	
	Chemicals	
	Total	\$ 10,000
K	6 Sets of Molds for 6-Section 18. Machine (Minimum Requirement)	
	6 At \$3,300 = 19,800 use	\$ 20,000

[fol. 964] Glass Container Plants
New Companies—Since 1950

Arkansas Glass Company	Jonesboro, Arkansas	1 furnace
Castle-Hanson Corporation	Rochester, New York	1 furnace
Gallo Glass Company	Modesto, California	1 furnace
Gulfport Glass Company	Gulfport, Mississippi	2 furnaces
Underwood Glass Company	New Orleans, Louisiana	2 furnaces

Exits From Field—Since 1950

Reed Glass Company	Rochester, New York	3-4 furnaces information not complete
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[fol. 965] Glass Container Plants
New Plants or Plant Additions—Since 1950
Existing Companies

Anchor Hocking Glass Corp.	Jacksonville, Florida	1 furnace added
Brockway Glass Co.	Freehold, New Jersey	1 furnace, new plant
Chattanooga Glass Co.	Corsicana, Texas	1 furnace, new plant
Continental Can Co.	Montgomery, Alabama	1 furnace added
Continental Can Co.	Plainfield, Illinois	1 furnace, new plant
Diamond Glass Co.	Royersford, Pa.	1 furnace added
Foster Forbes Glass Co.	Marion, Indiana	2 furnaces added
Knox Glass Co.	Dayville, Conn.	1 furnace, new plant
Knox Glass Co.	Knox, Pa.	1 furnace added
Knox Glass Co.	Palestine, Texas	1 furnace added
Laurens Glass Works	Laurens, S.C.	1 furnace added
Liberty Glass Co.	Sapulpa, Oklahoma	1 furnace added
Metro Glass Bottle Co.	Dolton, Illinois	1 furnace, new plant
Metro Glass Bottle Co.	Jersey City, N.J.	1 furnace added
Metro Glass Bottle Co.	Washington, Pa.	1 furnace, new plant
Northwestern Glass Co.	Seattle, Washington	1 furnace added
Owens-Illinois Glass Co.	Atlanta, Ga.	2 furnaces, new plant
Owens-Illinois Glass Co.	Bridgeton, N.J.	1 furnace added
Owens-Illinois Glass Co.	Los Angeles, Calif.	1 furnace added
Owens-Illinois Glass Co.	Portland, Oregon	2 furnaces, new plant
Owens-Illinois Glass Co.	Waco, Texas	1 furnace added
Pierce Glass Co.	Port Allegany, Pa.	1 furnace added
Thatcher Glass Mfg. Co.	Lawrenceburg, Ind.	1 furnace, new plant
Thatcher Glass Mfg. Co.	San Luis, Calif.	1 furnace, new plant

[fol. 966] Publications Referring to New Types
of Machines Being Developed for Use of
Glass Container Makers

Company	Machine	Reference
Owens-Illinois Glass Co. Toledo, Ohio	G 50	Ceramic Industry—November 1955, page 51 Glass Industry—October 1955, pages 520 and 557 American Glass Review—October 1955, pages 12 and 13 Wall Street Journal—May 23, 1956
Knox Glass Co. Knox, Pa.	JK	Knox Glass Co. Annual Report 1957 Glass Packer—September 1958, page 47— descriptive advertisement
Lynch Corporation Anderson, Indiana	Two New Machines	Lynch Corporation, 1957 Annual Report

[fol. 967]

GOVERNMENT'S EXHIBIT 400

Tin vs. Glass

United States and Canada
Commercial Research Dept.
Metal Container Section

December, 1954

[fol. 968]

January 10, 1954.

Mr. R. G. Fisher

**Tin Versus Glass—Fruit & Vegetable—Canada
and the United States**

Unfortunately there is a dearth of statistical data on the breakdown between tin and glass used in fruit and vegetable packing in Canada. On the other hand, published information on the United States is available. Thus, though this is a qualitative analysis, it seems quite clear that glass is more important as a fruit and vegetable packaging medium in the United States than in Canada. In this country, 90% of the major fruits and vegetables packed is in cans; in Canada, a rough estimate is that 95% is in tin. Although strict quantitative information is available just for tomato catsup in Canada, only two other products, chili sauce and grape juice, account for any quantity of glass in Canada. In neither Canadian nor United States figures has baby food been included in making the above comparisons. However, it is interesting to note that all Canadian baby food is in cans, while about 60% of the pack in this country is in glass.

Post-war trend data indicates that tin has been the F & V growth item in this country while both tin and glass have grown significantly in Canada. Glass usage in the United States for all packing purposes, however, has mushroomed. Since pre World War II the number of glass units used has increased 141% while can usage has gone up only 90%.

Dana Hill.

DH/mla

cc: Messrs: T. C. Fogarty, P. P. Wojtul, W. K. Neuman,
L. Ylvisaker, L. C. Dudley, J. R. Brewer, J. W. Cuff.

[fol. 969]

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United States and Canada

Growth of Glass Packages Far In Excess of Tin In United States

Although there are only about half as many glass containers presently used in packaging as metal cans, the glass industry has shown a much stronger growth than tin since 1940. Shipments of all glass containers (approximately 18 billion actual count) this year will show an increase of 141% above shipments for the year 1940. The same comparison shows that shipments of metal cans (#2 basis) will be about 37 billion units in 1954 or an increase of 85-90% over the 1940 level.

Greater Percentage of Tin Used For Food Products Than Glass In This Country

Slightly less than $\frac{1}{2}$ of the glass containers produced are used in food products. The greatest portion of these are wide mouth jars (the type used for fruit and vegetable packs). Normally about $\frac{2}{3}$ of the metal containers produced are used for food products. Fruit and vegetable packs require about 34% of the metal containers produced in the U. S.

10 Months '54 Food Packs In Glass Show Increase Over '53 While Tin Lags

Food Packs in glass for the first 10 months of 1954 lead the same period in '53 by about 7%. Total food packs in metal for 10 months of 1954 are about 2.5% behind the same period in 1953. Fruit and vegetable packs in tin as a group lag by 3%.

The above comparison on Canadian packs cannot be made because figures on glass and tin usage are not reported in such a form to permit the same comparisons. However, in the following portion of the report we have traced specific trends as far as figures and estimates will permit on the glass vs. tin pack of fruits and vegetables for both Canada and the U. S.

Tin Retains First Place In Fruit And Vegetable Packing In Both The United States And Canada

Tin remains the dominant package in both the United States and Canada in the processing of fruits and vegetables. [fol. 971] Growth since 1947 has gone into tin while glass has remained more or less static.

In 1947, when tin restrictions were being removed, the United States packed over 277 million cases of fruits, vegetables and juices (excluding citrus) in the tin container. This was 86% of the total pack (322 million cases). As tin restrictions became less and less, this percentage increased—to 90.2% in 1949. During the following years, tin continued to share about 90% of the U. S. fruit and vegetable packs. In 1953, the pack in tin amounted to 369.4 million cases (90.1%) while the glass pack was only 40.6 million cases (9.9%).

Canada leans even more to tin than does the United States. As for the basic fruit and vegetable packs, almost 100% is put up in the tin package. Items such as tomato catsup, chili sauce and grape juice, however, (this is also true in the U.S.) are heavier in glass. Tomato catsup, for instance, averages about 84% in glass and 16% in tin.

But Baby Food Favors Glass In U. S. And Tin In Canada

Baby food is one category in the United States packaging field where the pack is greater in the glass container than in tin. Prior to World War II very little baby food (fruits, vegetables, meat products, custards, puddings and soups) was placed in glass but by 1947 more than 61% of the pack was in glass. Since that year more than 53% of the baby food pack in the United States has been put up in glass. In Canada, however, all baby food packed to the present time has been placed in the metal container.

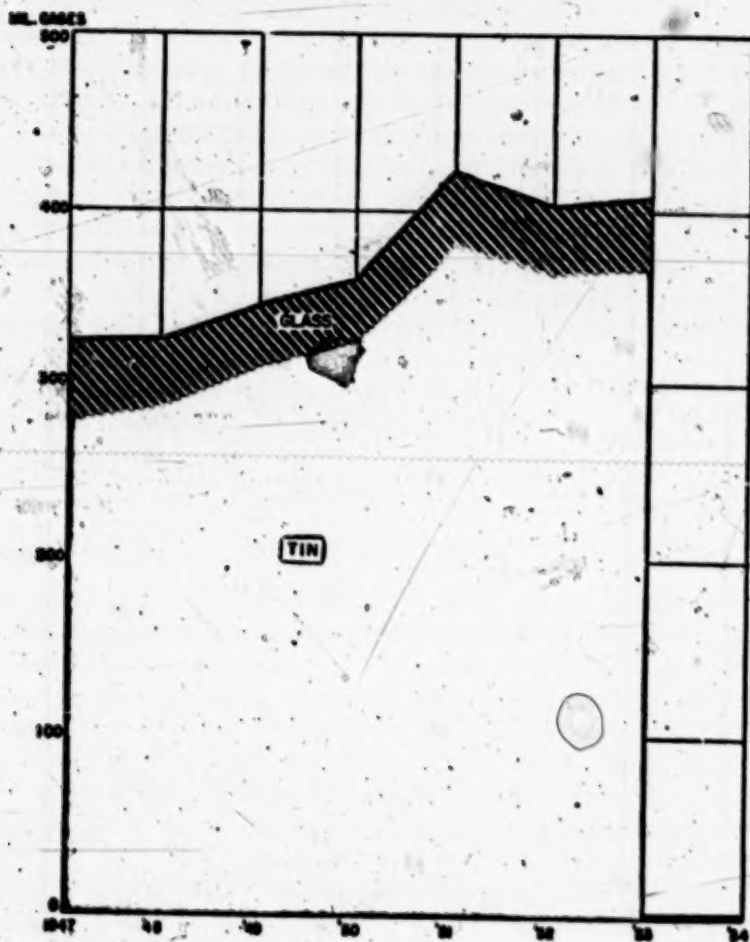
The following group of charts and tables give specific comparisons of the use of tin and glass in the U. S. and Canadian vegetable packs.

2524

[fol. 972]

CHART I

TREND IN U.S. PACKS¹
FRUITS, VEGETABLES & JUICES
TIN VS. GLASS



1. EXCLUDES CITRUS AND BABY FOODS

COMMERCIAL RESEARCH DEPT.
DECEMBER 1954

[fol. 973]

Table I

U. S. Packs of Fruits, Vegetables & Juices*

Tin vs. Glass

(millions of cases)

Year	Tin		Glass		Total Tin & Glass	
	Qty.	% of Tot.	Qty.	% of Tot.	Qty.	%
1947	277.1	86.0	45.2	14.0	322.3	100.0%
1948	286.9	88.1	38.9	11.9	325.8	100.0
1949	310.2	90.2	33.7	9.8	343.9	100.0
1950	322.8	89.4	38.1	10.6	360.9	100.0
1951	379.6	89.6	44.1	10.4	423.7	100.0
1952	362.1	90.0	40.2	10.0	402.3	100.0
1953 ^b	369.4	90.1	40.6	9.9	410.0	100.0

*—These figures include fruits (excl. citrus), seasonal vegetables, non-seasonal vegetables (incl. dried beans), non-citrus juices, and vegetable juices.

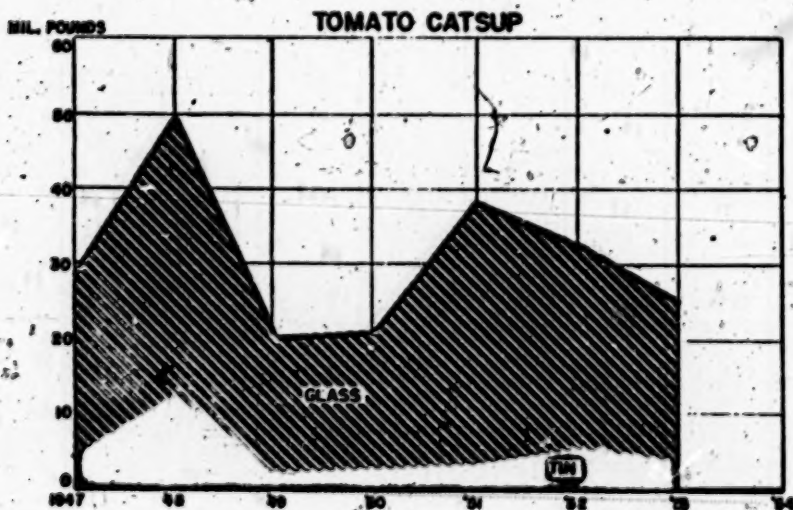
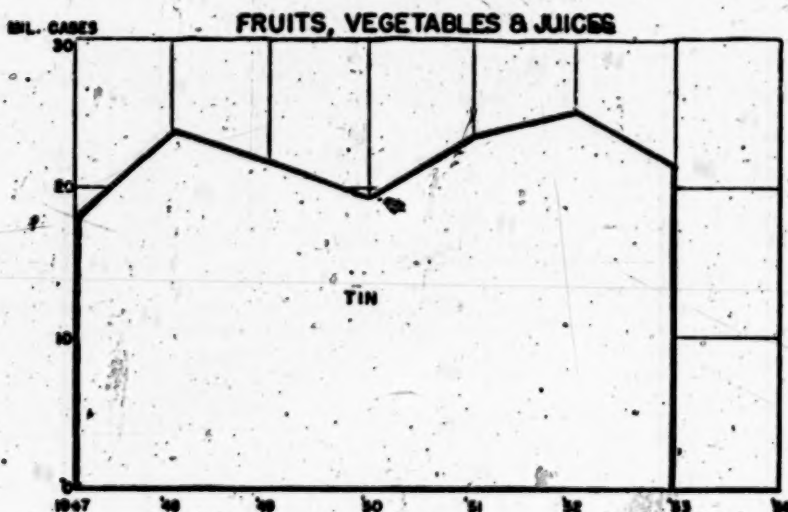
^b—Preliminary.

Source: Western Canner & Packer.

2526

[fol. 974]

CHART II
TREND IN CANADIAN PACKS
TIN VS. GLASS



COMMERCIAL RESEARCH DEPT.
DECEMBER 1954

[fol. 975]

Table II

Canadian Packs of Fruits, Vegetables & Juices

Tin vs Glass

Year	Total Tin* (mil. of cases)	Tin		Tomato Catsup Glass (millions of pounds)		Total	
		Qty.	% of Tot.	Qty.	% of Tot.	Qty.	%
1947.....	18.0	4.4	15.2	24.4	84.8	28.8	100.0
1948.....	23.9	11.8	23.8	37.7	76.2	49.5	100.0
1949.....	21.7	2.2	11.2	17.8	88.8	20.0	100.0
1950.....	19.2	2.9	13.8	18.0	86.2	20.9	100.0
1951.....	23.6	3.6	9.5	34.5	90.5	38.1	100.0
1952.....	25.1	5.3	16.2	27.6	83.8	32.9	100.0
1953*	21.4.	4.1*	16.0	21.4*	84.0	25.5	100.0

*—These figures include fruits, seasonal vegetables, non-seasonal vegetables, tomato & apple juices. These items are virtually all in tin. The exception is tomato catsup which is shown separately by tin and glass. The portion of this item in tin, however, is included in the total tin picture.

*—Preliminary.

*—Estimated.

Source: Canadian Food Industries. The Fruit & Vegetable Preparations Industry. The Canning Trade.

2528

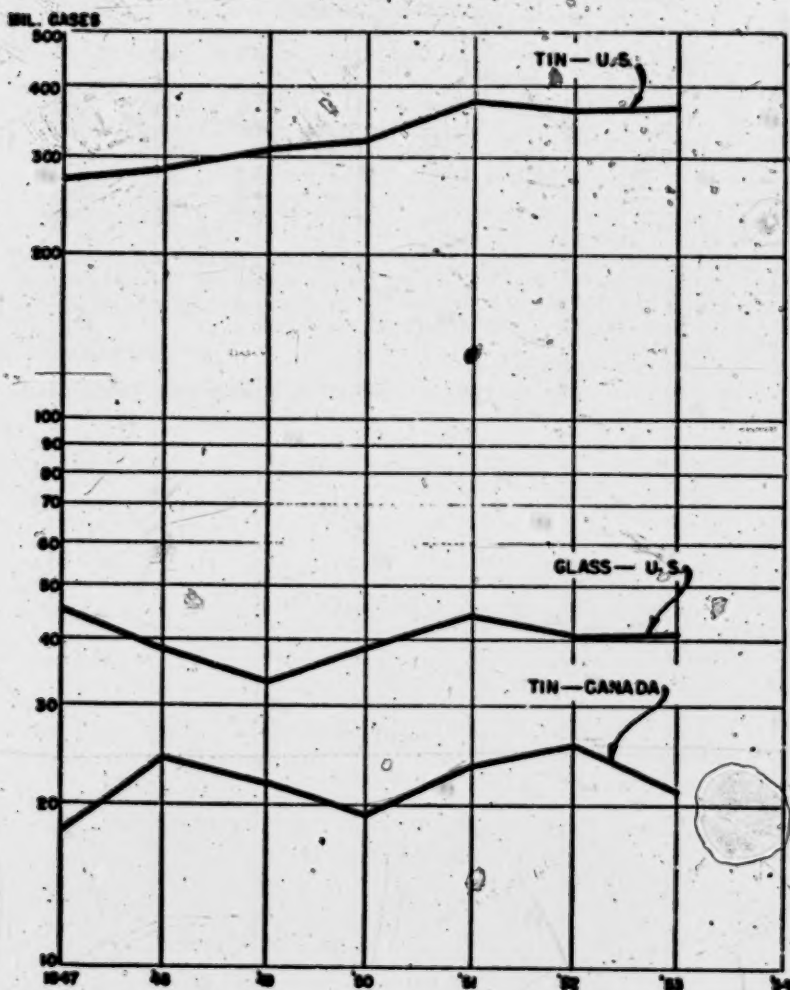
[fol. 976]

CHART III

TREND IN FRUIT, VEGETABLE & JUICE PACKS

UNITED STATES AND CANADA

TIN VS. GLASS

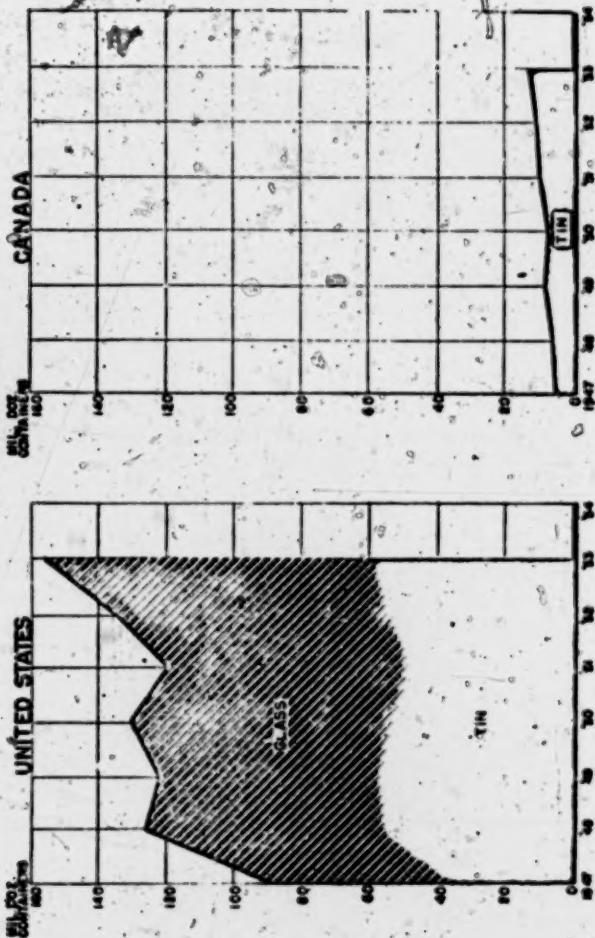


COMMERCIAL RESEARCH DEPT
DECEMBER 1954

[fol. 977]

2529

CHART II
TREND IN BABY FOOD PACKS
TIN VS. GLASS



COMMERCIAL RESEARCH DEPT.
DECEMBER 1954

[fol. 978]

Table III

Baby Food Packs*
U. S. and Canada
Tin vs. Glass

Year	United States		Glass		Total		Canada** Mil. Doz. Containers
	Tin Mil. Doz. Containers	% of Tot.	Mil. Doz. Containers	% of Tot.	Mil. Doz. Containers	%	
1947	35.0e	38.9	54.9e	61.1	89.9	100.0	5.3
1948	54.9	43.3	71.8	56.7	126.7	100.0	6.1
1949	56.7	46.4	65.4	53.6	122.1	100.0	8.3
1950	52.6	40.4	77.6	59.6	130.2	100.0	7.6
1951	47.2	39.5	72.4	60.5	119.6	100.0	9.8
1952	52.2	38.9	81.9	61.1	134.1	100.0	10.2
1953	50.2	37.9	97.2	62.1	156.4	100.0	12.5

*—Includes vegetables, fruits, meat products, custards, puddings & soups.

**—All tin.

e—Estimated.

Source: U.S.—National Canners Associations.

Canada—Canadian Food Industries.

[fol. 979]

GOVERNMENT'S EXHIBIT 400A

New York #43
November 24, 1947.

Mr. G. H. Muth

Competition—Glass vs. Tin

Attached are data sheets summarizing information received from our division offices on the comparative costs of tin and glass containers for the following products: Processed Foods, Baby Food, Insecticides, Soluble Coffee, Vacuum Packed Coffee, Ovaltine, Baking Powder, and Syrup.

It is our feeling that these figures should be considered only as an indication of price difference in the two types of containers because there are so many variables affecting the cost of each type to the individual packer.

Freight on the empty cans to the packer will differ according to the distance from his source of supply. The zone prices of glass, on the other hand, do not reflect actual freight costs from the source of supply.

The extent of a packer's market area will materially affect the comparative difference in cost to the packer or his delivered selling price because of the added weight in glass.

Costs of production, of course, will vary according to the efficiency of the equipment used on tin and that used on glass.

One packer of Insecticides pays over \$9.00 per M for his quart bottle label, while another is content to pay only \$3.00 per M. One packer of Baby Food spends but \$1.70 per M cans for his reshipping cartons and another spends \$2.12 per M cans.

However, we think that the following conclusions can be taken from these comparisons and from other information received with the reports from the division offices.

In general, the glass package is less expensive to the packer of Non-Processed Food items. *The closure cost of the jar makes the glass package more expensive for Processed Foods.*

Except for exceptionally high-speed operations, glass can be run at the same filling and closing speeds as tin with approximately the same investment.

Referring specifically to these attached comparisons:

Containers for Processed Foods—From a price standpoint, we are in a favorable position on Processed Food [fol. 980] items, and consumer preference will dictate the volume of these items packed in glass. Packers and distributors favor tin almost unanimously.

Containers for Baby Food—Our Baby Food can prices as compared to glass would seem to offer sufficient attraction to the packer to use tin, but here the consumer preference for glass controls the package used and the packer is somewhat indifferent because his price in glass more than compensates for the increased cost of that package. This probably will not change until the housewife becomes more price conscious.

Containers for Insecticides—The packer and distributor seem to prefer tin as a package for this product, but should our can prices further increase, the lower cost of glass may offer a saving which the buyer cannot afford to pass up.

Containers for Soluble Coffee—It would appear that we will have to guard against any material increase in the price of our Soluble Coffee can if we want to make inroads on the glass container volume. We have no definite statements as to packer, distributor or consumer preference, but it is indicated that consumers may favor the more positive reclosure of the glass jar.

Vacuum Packed Coffee—While the cost to the packer of the glass container is less, apparently packer, distributor, and consumer preference for tin outweighs this price consideration.

Container for Ovaltine—We have priced ourselves out of this \$600,000 market.

Containers for Baking Soda—A further increase in the price of cans will price us out of the business with this particular packer, which is estimated at twenty million units per year. We received but one report on containers for this product and you will notice that it is only because of the extensive market area for the finished goods that cans now compare favorably with glass.

Containers for Syrup—Our New Orleans District Office has told us that we are not competitive with glass and are losing business because of the difference in cost in favor of

glass. However, it is also reported that there is substantial consumer preference for glass in the "table" sizes.

We hope to be able to gather further data on the comparative costs of cans and glass containers used for packing Prune Juice and Apple Juice but, as yet, have been unsuccessful. These will be passed along to you when they are received.

[fol. 981] We understand that you plan to incorporate this data with that which you have accumulated on comparative costs of containers for Beer, and will also develop further information on consumer and packer preference, as well as the total volume of business available in the respective fields.

If you require any more detailed information than is being furnished on these comparisons, please let us know and we will try to obtain it for you.

R. S. Hatfield.

RSH:S
encs.

CC:—Mr. T. C. Fogarty,
Mr. P. L. Brachle,
Mr. F. W. Rosenbauer.

[fol. 982]

2534

Glass and Tin
Processed Food Containers
(All prices-Per Thousand Containers)

	Ravioli		Green Beans		Fruit	
	300 x 407 Plain In Bags	16 oz. Jar	303 x 406 Plain Bodies .50 Ends L/I In Bags	16 oz. Jar	401 x 411 Plain In Bags	28 oz. Jar
I. Packaging Materials:						
Price per thousand.....	17.21	20.00 ^a	19.94	20.96	26.80	30.35
Approx. delivered freight .....	.74	In base price	.95	In base price	1.35	In base price
Approximate price reshipping cartons	2.60	In base price	3.56	In base price	4.79	In base price
Approx. price labels	1.25	.85	2.30	1.12	3.70	.83
Closure cost	In base price	8.05	In base price	8.13	In base Price	10.50
Complete Packaging Materials	21.80	28.90	26.75	30.21	36.64	41.68
Net Difference In Favor of Tin		7.10		3.46		5.04
II. Production Costs:			Direct Labor Costs on Filling & Closing Line Only			
	23.55	28.10	.60	1.05	.65	.90
III. Delivery Costs:						
To Market at 35¢ cwt.(about 250 mi.)	4.15	5.20	4.25	5.20	7.15	8.80
IV. Total Cost:	49.50	62.20	31.60	36.46	44.44	51.38
Net Difference In Favor of Tin		12.70		4.86		6.94
V. Tinplate Price Factor:						
Price Change for 10¢ Fluctuation in Tinplate Price						
Tin .....	.22		.23		.33	
Glass .....	.03		.04		.04	
Net Change .....	.19		.19		.29	

Sources: Chef-Boy-Ar-Dee Quality Foods, Milton, Pa., Lakeside Packing Co., Manitowac, Wis., Stokeley Foods Inc., Indianapolis, Ind., Michigan Fruit Cannery, Fennville, Mich.
November 14, 1947.

[fol. 983]

November 21, 1947.

Glass and Tin
Baby Food Containers
(All Figures Per Thousand Containers)

	Gerber Products Company Freemont, Michigan			Clapp Baby Food Division American Home Foods, Inc. Rochester, New York		
	202 x 214 Can I/S Lac.	5 oz. Jar 2 3/32 x 3 9/16" 1 5/8" White Cap	202 x 214 Can I/S Lac.	5 oz. Jar	211 x 210 Can I/S Lac.	7 3/4 oz. Jar
I. Packaging Materials:						
Price per M in Bags	11.03	12.56	11.03	13.06	14.20	15.42
Approx. delivered freight per M .....	.45	In base price	.18	In base price	.23	In base price
Approx. price reshipping cartons	1.70	In base price	2.12	In base price	3.23	In base price
Approx. price per M Labels .....	.83	.62	.80	.60	.90	.70
Closure cost	In base price	5.75	In base price	5.84	In base price	7.50
Comparative Cost						
Packaging Materials	14.01	18.93	14.13	19.50	18.56	23.62
Net Difference In Favor of Tin		4.92		5.37		5.06
II. Production Costs:						
Cost of Production	8.56	9.72		No Information		
III. Delivery Costs:						
To New York Market	2.44	3.50	1.59	2.11 /	2.16	3.12
IV. Total Costs	25.01	32.16	15.72	21.61	20.72	26.74
Net Difference In Favor of Tin		7.14		5.89		6.02
Selling Price of Goods	8.17 Higher in Glass					
Production Line Investment	\$17,800.	\$21,800.		No Information		
Filling & Closing Speeds	250/Min.	250/Min.		No Information		
Price Change Per 10¢ Fluctuation in				Same for Glass as Tin		
Tinplate Price						
Tin .....	.11		.11		.14	
Glass (Closure) .....	.02		.02		.03	
Net Change .....	.09		.09		.11	

[fol. 984]

November 21, 1947.

Glass and Tin
Syrup Containers

	307 x 308 Single Friction Can (16 oz.)	24 oz. Bottle Screw Cap	401 x 411 Single Friction (32 oz.)
I. Packaging Costs:			
Price Per Thousand.....	26.82	26.32	34.99
Delivered Packing Plant...	In base price	In base price	In base price
Approx. Price of Reshipping Cartons	2.80	In base price	5.12
Approx. Label Cost.....	1.50	.150	1.75
Closure Cost	In base price	2.60	In base price
	31.12	30.42	41.86
Packaging Cost Per Gallon	.25	.16	.17
II. Production Cost:			
	Reported To Be Run At Same Speed On Same Line —Possibly One Less Oper- ator On Cans		No Information
III. Delivery Costs:			
Selected Destination Little Rock, Ark. from New Or- leans, La. @ LCL Rate of \$1.05 cwt. ....	.10 per Gal.	.13 per Gal.	.10 per Gal.
IV. Total Cost:			
	.35 per Gal.	.29 per Gal.	.27 per Gal.
V. Tinplate Factor:			
Price Change for each 10¢ Fluctuation in Price of Tin- plate	1.92 per 1,000 Gal.	.05 per 1,000 Gal.	1.49 per 1,000 Gal.

Source: Anheuser-Busch, Inc., St. Louis, Mo.

[fol. 985]

November 21, 1947.

Glass and Tin
Containers for Dry Products
(All Figures Per Thousand Containers)

	Soluble Coffee		Baking Powder ⁴		300 x 501 Paper Seal	For Ovaltine		
	2 1/8 x 3 1/8 Lock Top Paper Seal	4 oz. Jar	211 x 400 Fric. Top Cans	8 oz. Wide Mouth Jar	6 oz. Fric. Top	6 oz. Wide Mouth	312 x 604 Paper Seal 14 oz. Fric. Top	14 oz. Wide Mouth
I. Packaging Materials:								
Price Per M.....	24.89	14.72	21.41	17.36	*29.73	21.20	*44.59	28.13
Approx. Freight to Packer....	.73	In base price	In base price	In base price	In base price	In base price	In base price	In base price
Approx. price reshipping car- tons	2.00	In base price	5.00	In base price	6.48	In base price	8.68	In base price
Approx. price labels (3 colors)	In base price	2.00	In base price	.85	In base price	1.50	In base price	1.50
Closure	In base price	5.06	In base price	5.61	In base price	7.44	In base price	7.44
Complete Packaging Materials	27.82	21.78	26.41	23.82	36.21	30.14	53.27	37.06
Net Difference	5.84 less in glass		2.59 less in glass		6.07 less in glass		16.21 less in glass	
II. Delivery Costs:	Sunbury, O. to NY		Customers Aver.		Selected Chicago to Minneapolis			
Delivery Cost to Market.....	2.10	3.25	6.77	9.70	4.17	5.00	7.50	9.17

Glass and Tin
Containers for Dry Products
(All Figures Per Thousand Containers)

	Soluble Coffee		Baking Powder		For Ovaltine	
	2 7/8 x 3 3/4 Lock Top Paper Seal	4 oz. Jar	2 1/2 x 4 1/2 Fric. Top Cans	8 oz. Wide Mouth Jar	300 x 501 Paper Seal 6 oz. Fric. Top	312 x 604 Paper Seal 14 oz. Fric. Top
III. Production Cost:	Reported to be run at same speed (150/ min.) same number operators		Reported to be run at same speed (120/ min.) Same number operators		No Information	
IV. Total Cost:	29.72	25.03	33.18	33.52	40.38	35.14
Net Result	4.69 less in glass		34 less in tin		5.24 less in glass	
V. Tinplate Factor:						
Price Change Per 10¢ fluctua- tion in tinplate—						
Tin .....	.16		.20		.38	.42
Glass (closure) .....	.02		.02		.04	.04
Net Change .....	.14		.18		.24	.38

* Cost plus 10% Profit.

Sources: Nestle's Milk Products, Inc., New York, N. Y., Great Starr Coffee Co., New York, N. Y., Jacques Mfg. Co., Chicago, Ill.,
The Wander Company, Chicago, Ill.

[fol. 986]

November 21, 1947.

Glass and Tin
"F" Style Cans
(All Prices Per Thousand Containers)

	6 Oz. 500,000 Lots	½ Pint 500,000 Lots	1 Pint 500,000 Lots	1 Quart 250,000 Lots
I. Base Prices:				
Tin				
Plain S.C.M.T. (No Litho) (Jersey City)	25.65	23.99	29.70	42.03
Screw Fitting	—	6.18	6.18	6.18
Paper Bags .....	.40	.40	.65	1.00
	26.05	30.57	36.53	49.21
Glass				
Plain (No Label)	17.83	20.84	28.48	43.41
Closure	2.12	2.12	2.40	3.00
	Base Price Includes Reshipping Cartons			
Packaging	19.97	22.96	30.88	46.41
Difference in favor of Glass	6.08	7.61	5.65	2.80
II. Decorating:				
3 Colors Tin	1.88	2.09	2.84	3.10
Label Cost (Approximate)	4.50	1.50	2.50	3.50
Approx. Cost Difference .....	.38	.59	.34	— .40
III. Reshipping Cartons:				
For Cans (Approximate)	3.35	3.05	4.15	9.50
For Glass		Included In Base Price Glass		
IV. Total Packaging Materials:				
Difference in favor of Glass	9.81	11.25	10.14	11.90
V. Production Costs:				
Direct Labor at \$1.00 per Hour on Filling & Closing Line Only				
Tin .....	.50	.50	.50	.63
Glass	1.00	1.00	1.00	1.25
VI. Delivery Costs:				
Extra Cost in Glass to Market about 250 miles Distant, (35¢ per cwt., approx.) .....	.55	.99	1.27	2.26
VII. Net Cost:				
Difference in favor of Glass	8.76	9.76	8.37	9.02
VIII. Price Change:				
For 10¢ fluctuation in Tinplate per base box				
Tin .....	.16	.18	.28	.40
Glass .....	.01	.01	.01	.02
Net Change .....	.15	.17	.27	.38

Sources: Boyle Midway Inc., Jersey City, N. J. and Chicago; Ill. Stanco Inc., New York, N. Y. Taylor, Lowenstein Co., Mobile, Alabama.

[fol. 987]

November 21, 1947.

Glass Vs. Tin
Containers For Coffee
(All Prices Per Thousand Cans)

	1 Pound Can Body Litho. 4 Colors 5 1/4" x 3 3/4" 500,000 Lots	1 Pound Jar Dura Glass- Ultra Vac- 66 M/M Press On Cap
I. Packaging Materials:		
Base Price Per Thousand	\$43.61 (in bags)	\$38.46
Delivered Freight	In base price	In base price
Reshipping Cartons (Approximate)	5.21	In base price
Label Cost (Approximate)	In base price	1.30
Closure Cost	In base price	In base price
Total	\$48.82	\$29.76
II. Production Costs:		
Excess Glass over Tin	—	3.10
III. Delivery Cost:		
To Market (at 35¢ cwt. or about 250 miles)	5.25	6.85
IV. Comparative Costs:	54.07	51.71
Net Difference	2.36 In Favor of Glass	
V. Tinplate Factor:		
Price Change Per Unit Fluctuation in Tinplate Price:		
Tin .....	.43	
Glass .....	.03 (Close)	
Net Change .....	.40	

Source: Standard Brands, New York City.

[fol. 988]

GOVERNMENT'S EXHIBIT 401

The Packaged Syrups Market

An Appraisal of the Metal Container's Competitive Position
Commercial Research Department

April 1949

Summary	
Introduction	
I Size and Nature of the Market	
II The Element of Price in Package Preference ...	
III Continental's Competitive Position	

Our appraisal of the packaged syrups market and the competitive status of metal cans versus glass containers permits the following conclusions:

(1) The over-all packaged syrups market, for household and institutional consumption, is estimated to be around 750 million pounds per year. Of this total, corn syrups sold as such and blended in other syrups would normally average about 350 million pounds. Cane syrups, honey, molasses and maple syrup would make up the balance of the syrups or sweeteners.

(2) The market is logically divisible into two groups: (a) the small size market, packages smaller than 5 pounds, estimated at around 500 million pounds per year; and (b) the large size market, containers of 5 pounds or larger, estimated at about 250 million pounds per year. Of the latter group, roughly 100 million pounds are probably consumed by institutions, including restaurants, while the remaining 150 million go into household consumption, primarily in rural areas.

(3) In the small size market probably more than 90% of syrups consumed are packaged in glass containers. In this market package design is more important than the cost of the container. Glass predominates in these sizes primarily because of consumer preference, the glass jar currently being more acceptable for use on household tables and seemingly more adaptable for continued use in small amounts. The most common sizes are the 12 ounce and the 1½ pound (1 pint) jar.

(4) In the large size market the metal can retains its traditional overwhelming dominance, primarily because of preference among producers, wholesalers and retailers, due to the can's lower shipping, handling and breakage costs.

(5) The price of the container to the packager is not a dominant factor in the selection of either glass or metal. In the small sizes, metal cans are competitive costwise, but [fol. 991] currently lack consumer acceptance. In the large size market the glass jar has, up until the present, been unsuccessful in making any significant inroads at prevailing price ratios to metal. It, therefore, follows that a price reduction on metal cans in the 5 or 10 pound sizes would not result in any additional business. Likewise, price reduction alone on the smaller 1½ or 2½ pound capacity cans would probably not result in any additional business.

(6) However, there is apparently a critical area in between the small size market and the very large, where the cost of the container could be the deciding factor. Since the 5 pound size is logically the next size into which glass might make important inroads, if glass jars were priced sufficiently below the price of metal cans to more than offset higher handling, shipping and breakage costs, syrup packagers could probably be persuaded to shift to glass in this size. Thus, although a price reduction on metal cans in the 5 pound size would not be expected to increase materially the volume of business, it may well be a critical factor with respect to holding our present participation.

(7) At present there is a price differential in favor of glass jars in the 5 pound size amounting to nearly 20% of quoted delivered prices for glass containers. While this amounts to less than 1.4 cents per can for a product which would retail at around 60 cents or higher, it could well prove to be a significant cost advantage in favor of glass jars which might result in the loss of part of the large market for 5 pound containers. The 5 pound size accounts for around 48% of Continental's nearly \$2 million volume of business in syrup cans. Furthermore, this is a size which is important to most of Continental's large customers, the top 5 of whom account for about 45% of Continental's syrup can business. The loss of one or more of these customers to glass would obviously be serious.

[fol. 992] (8) It is quite possible that the metal can could secure additional business—i.e., the lost business in the small container market—if it could be made sufficiently attractive and adaptable to be used on household tables with-

out increasing the retail price to the consumer. Here, however, package design would be the critical factor.

The foregoing conclusions appear to us to support the following recommendations:

1. That serious consideration be given to Sales Department recommendations for reducing the quoted price on #5 round single friction cans from the present price of \$67.38 per thousand to a price in the neighborhood of \$60, in order to reduce a potentially dangerous spread in favor of glass jars.
2. That consideration be given to the development and market testing of a small-sized metal container, sufficiently attractive and adaptable for continued use to compete effectively with glass jars for use on household tables. The cone-top beer can, adapted with a replaceable cap and attractively lithographed, appears to offer one possibility in this respect.

DHW

4/27/49

[fol. 993]

GOVERNMENT'S EXHIBIT 402

The Market for Peanut Butter in Cans

I. The Peanut Butter Market

Peanut butter is a simple substance. Although requiring constant and critical control in its manufacture, it is little more than mashed peanuts. Raw peanuts are shelled, cleaned, roasted, blanched, cooled, inspected and ground, and the resultant butter is packaged, typically while it is still hot (145° or so) from the grinding. It is generally accepted that there is a weight loss, after shelling, of about 15% in the manufacturing process: thus 100 pounds of shelled peanuts will normally yield about 85 pounds of peanut butter. Currently popular is peanut butter to which small chunks of peanuts have been added.

Because of its tendency to rancidity when exposed to air, peanut butter is packed in air-tight containers and a substantial portion of it is vacuum-packed. Shelf-life varies with the care used in manufacture and inversely to storage temperatures. At room temperatures typical shelf-life (in

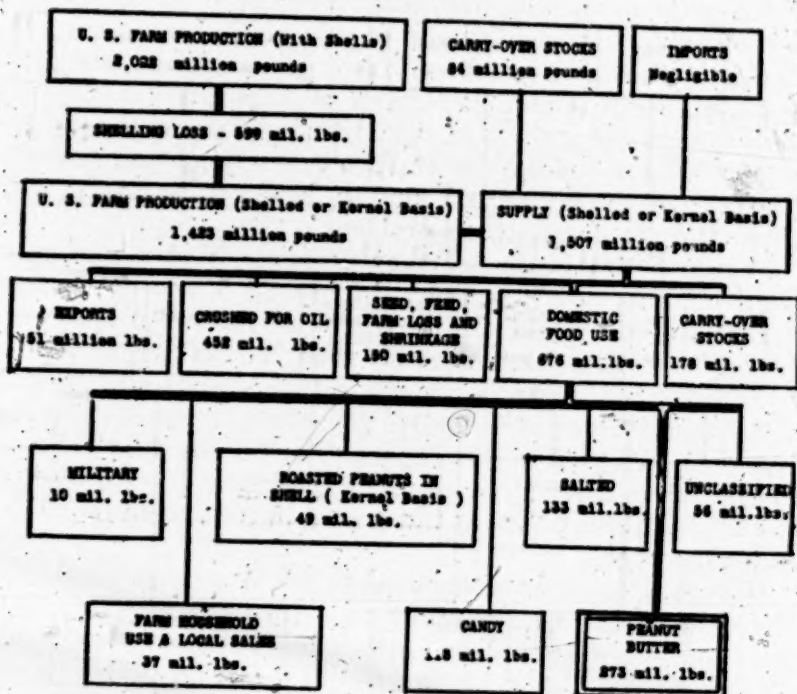
terms of acceptable rancidity) is apparently about 300 days, although a range of 100 to 600 days was observed in one test. This undoubtedly does not apply to vacuum-packed peanut butter prior to its initial opening. Storage at 50° F or less not only retards rancidity and unpalatability, but also prevents separation of peanut oil from peanut solids. Protection from light similarly reduces oil separation and preserves flavor. In storage at room temperature finely ground peanut butter separates more than coarsely ground butter. Homogenization of peanut butter, however, seems to be eliminating this separation problem.

Peanut butter is the primary domestic food use of the United States peanut supply. In 1950-51 it accounted for nearly 20% of the total United States peanut supply and for over 40% of all peanuts used for food. Peanut butter made by candy manufacturers for use in their own candy (probably 25 million pounds or more) is excluded from the peanut butter figures used in this report. The relationship of peanut butter to total U. S. peanut supply and disposition in the 1950-1951 crop year is illustrated in the diagram on the following page.

Peanut butter was introduced to the American public at the close of the 19th Century as a food for invalids. Its popularity as a spread has grown to the point, where, according to one survey, it is used in 9 out of 10 homes, a higher proportion than that of any other single spread. As indicated in Chart I, per capita production has doubled in the last 25 years and rose to over 2 pounds per person during World War II, when other spreads, particularly butter, were scarce. In 1950, production per capita was 1.5 pounds or 4 to 5 pounds per family, while total production was 232 million pounds⁹ (85% of the 273 million pounds of peanuts used for this purpose).

SUPPLY AND DISPOSITION OF PEANUTS, U. S.

1950 - 1 Crop Year



[fol. 995] The 232 million pounds of peanut butter estimated to have been packed in 1950 represent a manufacturers sales value of \$75-\$80 million, and a retail value of \$90-\$100 million. On the basis of the relationships existing in 1947, this is about one-third the value of all jams, jellies and preserves produced in the U. S., and about one-fourth of the poundage of these competing spreads. In the post-War period, the price of peanut butter has averaged some 10% above that of jams and jellies and 20% below that of American cheese. However, in 1950, peanut butter was 20% above jams and jellies and but a shade below American cheese. Thus, the price pattern has recently tended to favor jams and jellies over peanut butter as a spread for bread and for similar uses.

Although no regional analyses of peanut butter consumption are available, it is probable that per capita consumption in the South is higher than in the rest of the nation. How-

ever, peanut butter is not a poor man's fare, for consumption shows a pattern of increase from lower to higher income groups. The leveling off in production per capita in the post-War period is attributable not only to the readjustment to wartime shortages of other spreads, but also to the decline in the consumption of bread and a consequent decline in the use of all spreads.

II. The Nature of the Peanut Butter Industry

Although 198 firms are reported as packers or private brand distributors of peanut butter in the United States and are indicated as such by location on the accompanying map, the actual number currently engaged in business is probably considerably less. The manufacture of peanut butter is not exceptionally complicated and the capital equipment involved is not extensive. Consequently, numerous packers of related products can enter or leave the market as its attractiveness warrants and marginal producers can similarly come and go. Thus, the number of operating packers or private brand distributors is probably closer to 150 or less.

As is common in many industries, a small percentage of the producers account for a majority of the sales. The leading manufacturers of peanut butter, separately indicated on the map, undoubtedly command over 50% of all peanut butter sales. These firms are:

Brand	Manufacturer	Location
Peter Pan	Derby Foods, Inc.: Sub. Swift & Co.	Chicago, Ill.
Skippy	Rosfield Packing Co.	Alameda, California
Swift's	Swift & Co.	Portsmouth, Va.
Planters	Planters Nut and Chocolate Co.	Chicago, Ill.
Armour	Armour & Co.	Suffolk, Va.
Beech-Nut	Beech-Nut Packing Co.	San Francisco, Calif.
Ann Page, Sultana	Quaker Maid Co., Inc. (A & P)	Chicago, Ill.
Beverly, Real Roast	Table Products, Inc. (Div.: Glenfield Food Co.)	(Plant: Fort Worth, Texas)
Monarch or other	Reid, Murdoch Div., Consol. Grocers Corp.	Canajoharie, N. Y.
Kroger	Kroger Co.	New York, N. Y.
Laura Scudder	Scudder Food Products, Inc.	San Francisco, Calif.
Finast	First National Stores, Inc.	(other plants)
Tom's	Tom Huston Peant Co.	Chicago, Ill.
Sunny Jim	Pacific Food Products Co.	Cincinnati, Ohio
		Monterey Park (L.A.), Calif.
		Somerville, Mass.
		Columbus, Georgia
		Seattle, Washington

[fol. 996] Peter Pan (Derby Foods) is reportedly the nation's leading seller and claims complete national distribution. Skippy is most likely second in sales, with the others taking position in unspecified order. Peter Pan claims to outsell the next 12 brands combined; if this is true, it is most likely that the 14 packers or distributors listed on the preceding page sold from 125 to 150 million pounds of the 232 million pounds of peanut butter packed in 1950. Even if 30 to 50 million pounds of this 232 million pound total were large-quantity sales to institutions and other manufacturers, these 14 packers would still have sold 100 to 125 million pounds of peanut butter for home consumption.

In either case, the remaining 125 to 150 packers believed to be in operation in 1950 would have shared a packaged market of but 50 to 100 million pounds, for an average of 300,000 to 800,000 pounds each. While this quantity range is not inconsequential, it is minor compared with the 50 million or so pounds probably attributable to Peter Pan, the estimated 25 million pounds sold by Skippy (Rosefield Packing) and the 4 to 6 million pound average of the other 12 major firms.

The locational pattern of the peanut butter manufacturing industry, as seen on the map, is partly market-oriented and partly drawn to the peanut-producing regions of the South. A majority of the principal cities of the nation have at least one firm reported to be a packer or private brand distributor of peanut butter. Skippy (Rosefield Packing) is an exception to the generalization that the important packers also offer products other than peanut butter.

III. Peanut Butter Containers

If it can be reasonably assumed that about 200 million of the 232 million pounds of peanut butter produced in 1950 were packaged for home use, then the quantity of containers required was probably from 200 to 250 million packages. Although peanut butter is offered in a variety of sizes, the most popular units are in the 12 ounce to 16 ounce range.

Virtually all peanut butter is packed in air-tight glass containers and not uncommonly under vacuum. The only packer of any consequence known to be using metal cans is Peter Pan (Derby Foods). This firm, prior to Korea, packed peanut butter in 12 ounce and 28 ounce Trutite cans sup-

plied by Continental but, because of the inconvenience of metal restrictions, has eliminated the use of cans for the small size and packs in metal in the 28 size only (except for #10 cans for bulk sales). In 1951 Peter Pan purchased 2.2 million Trutite cans from Continental (value: \$143 thousand) but 1952 requirements are running at a lower rate. The Trutite can is a relatively expensive container for a product such as peanut butter but it is apparently popular in certain markets, such as insect-infested sections of the South, where its tight reclosure feature in combination with vacuum-packing is important.

The overwhelming popularity of glass containers for this product is largely attributable to their relative cost and the widespread acceptance of their reuseability. A one-pound glass jar today costs about \$4.50 per gross (\$31 per thousand) plus another \$10 or so per thousand for caps. With labels, this would total something over 4¢ each for a one-pound (16 ounce) glass jar for vacuum packing. This compares with the average of 6½¢ per 28 ounce Trutite peanut butter can supplied by Continental in 1951, and with an estimated 4½¢ to 5¢ per can for a 12 ounce Trutite in that year. It is probable that a one pound Trutite can today would cost close to 5½¢ per unit, which is some 20% higher than an equivalent glass jar at 4¢-plus per unit.

Also of major significance in this preference for glass containers is their popularity for reuse. One survey indicates that peanut butter jars are reused for storage, canning, deep freezing, and carrying food for lunches and picnics; while peanut butter *tumblers* are used for drinking, canning, storage and as gifts. This survey also revealed that most housewives prefer a *tumbler* with a pry-off lid to a *tumbler* with a screw cap, but that, for *jars*, the screw cap receives far stronger preference. Reasons given particular brand selection, with percentage importance, were:

1. Taste and flavor.....	67%
2. Previous usage.....	53
3. Keeping quality.....	47
4. Type of container.....	40
5. Cost.....	20
6. Appearance of quality.....	17
7. Carry-over of family brand.....	17
8. Type of cap.....	14
9. Advertising.....	5
10. Premiums.....	5

(Total exceeds 100% due to duplicate answers)

It is apparent that the type of container used by the packer is an important selling point in the marketing of peanut butter. On the other hand, vacuum-packing did not appear directly as a significant factor, although its effect on taste, flavor, keeping quality and appearance is not to be minimized.

Since Peter Pan (Derby Foods) is apparently the most important producer of peanut butter, its opinions in regard to packages are of value. This firm packs peanut butter under vacuum only and is not interested in anything other than a vacuum container. It is the only user of consequence of metal cans for retail packages and these are necessarily the Trutite or similar reclosure vacuum-pack can. Its only interest in metal cans at the moment is in regard to reduction of Trutite can costs (possibly through the use of a collar can), and even under such developments it does not anticipate a return to metal for smaller-than-28 ounce sizes. Peter Pan is relatively satisfied with present glass containers and, although it admits to considering new packages, expresses no desire to experiment with any new containers unless they can be vacuum-packed and compete effectively cost-wise with their existing packages.

Armour and Company is another major packer of peanut butter, although it does a volume considerably smaller than that of Peter Pan. Armour packs its retail sizes solely in glass but in both vacuum pry-off cap tumblers or jars, and in screw cap jars. Since the screw cap used has a gasket, the cooling of the hot butter after filling creates a partial vacuum in the screw cap jars. Armour points out, however, that the pry-off vacuum cap container is less expensive both in initial cost and in the filling operation. Speeds of 400+ units per minute are reported for pry-off caps, whereas a CT (Continuous Thread) screw cap line seldom exceeds 300 units per minute. Although Crown Cork and Seal has developed a vacuum screw cap (through the use of a more effective gasket), Armour is not interested because of its higher cost, the necessity for purchasing a Crown closing machine at \$9-\$12 thousand, and the fact that the line speed limit could still be no more than 300 per minute.

[fol. 998] IV. Conclusions and Recommendations

The peanut butter market of perhaps 250 million 12 to 16 ounce containers is not inconsequential, even though it is minuscule in comparison to that for beer packages, for example. Because of its tendency to rancidity, peanut butter for household consumption is now packed primarily in airtight glass tumblers and jars, which are of considerable importance to consumers because of their reuse value. Furthermore, a significant proportion of all peanut butter is packed under vacuum. To date, the glass container has cost the packer less than a comparable can and has been readily accepted by both the industry and the public as the standard type of peanut butter container. Metal is used for institutional packaging and for a small quantity of consumer units. Although the major known packer of small sizes in cans used both 12 and 28 ounce Trutite cans for peanut butter prior to Korea, only the 28 ounce size is now being filled and this at a rate of about 2 million cans per year.

For these reasons it appears that many packers of peanut butter would not be interested in conversion to metal cans for retail packaging unless significant cost or marketing advantages could be shown. In addition, the multitude of sizes currently on the market could be a serious problem facing the introduction of a metal can. Sizes exist at almost one ounce intervals from 5 ounces to 16 ounces, and at wider intervals to 28 ounces or more. This use of many sizes is a method of varying price less obtrusively, particularly in an inflationary period. A peanut butter can would presumably have to be standardized on one or two sizes, such as a 10 or 12 ounce and/or a 14 or 16 ounce package, which would cover the range of the most popular sizes.

Under these circumstances, it appears *unlikely* that the mere offering of a new metal container to the widely scattered peanut butter industry would produce rewarding results, particularly in view of the industry's present dollar and market investment in glass containers and their filling and closing equipment. On the other hand, it is possible that one or more packers could be *sold* on the use of a lock top can, for example, as a means of product differentiation. Should such tactics prove successful, a volume of from 5

million to as high as 50 million cans might be expected, although the latter figure would be highly optimistic.

Thus, except for presently unforeseen cost savings to the packer, the novelty approach offers the only encouragement for putting peanut butter in metal. It is reported that, at one time, a packer did successfully merchandise a child's toy pail, with handle, filled with peanut butter. This relatively expensive type of premium package is a further thought in the direction of product differentiation. It is likewise possible that a Decoware canister or other novelty item might in some way be promoted by one or more packers desiring to improve their market position.

Another suggestion is that peanut butter be packed in wax or plastic lined paper cups or tubs. If the paper and lining could withstand the filling temperatures of 145°F, and if there were no problems such as leaking, a 16 ounce paper container, for example, would offer significant cost savings over both glass and metal. A 16 ounce tub at under 3¢ compares quite favorably with glass and closure of 4¢ plus, and with a Trutite can at perhaps 5½¢ each. A 10 or 12 ounce paper tub, which might be a more popular size, would probably have a proportionate cost advantage. [fol. 999] Such a paper container would admittedly not be capable of being vacuum packed with peanut butter nor would it be as air-tight as glass or metal, but temperatures below 50°F and darkness retard rancidity and oil separation. A paper tub, possibly fitted with a slip cover if that is technologically and economically feasible, might, if necessary, be sold from a refrigerated display case in conjunction with a promotional campaign built around a freshness or economy theme. If a container could be developed which is suitable from a technological stand-point, it might then be given a preliminary marketing test by attempting to sell one or more smaller packers on introducing his product as a *unique* product in an *economy* package.

It is therefore recommended that:

1. Continental explore the periphery of the peanut butter packing industry in an attempt to interest one or more packers in the use of a metal container for product differentiation. Such a package might be a lock top can, a pail, a canister or some similar device which would also aid the sale of the product because of the desirability of the container

itself. This would not be expected to have any large volume prospects, but conceivably could be profitable business.

2. Continental's Paper Container Division evaluate the paper tub as a potential peanut butter package and, if warranted, attempt to interest certain packers in the use of paper containers for peanut butter, possibly as suggested above.

Commercial Research Department
November 25, 1952

[fol. 1000] GOVERNMENT'S EXHIBIT 404

From: R. D. Cleaves

August, 1956.

Continental's New Savorlock Can

We have chosen the name Savorlock as a one-word description of an outstanding new metal container which Continental is now ready to supply to the packaging trade in two sizes.



These containers have been designed to meet the specific needs of many products now being marketed in glass or other packaging materials. They are lock-top metal cans for consumer convenience. They are light-weight to save shipping costs. They are sealed against moisture penetration for long shelf life. They are styled and well-proportioned to give excellent display characteristics.

All of the desirable features which have been built into these containers, and which are discussed in more detail in

this Bulletin, are expected to bring enthusiastic acceptance by packers, retailers and, most important, consumers. We believe that the Savorlock can will prove to be one of the most successful packages ever introduced by Continental Can Company.

Packaging For Impulse Buying

Package design today has an importance that was not the case in the days before the supermarket. Shopping habits have changed. Formerly the housewife did not "market" as we now understand the word. She would take a grocery list to the corner store and the clerk would select her "two cans of peas, one pound of coffee, etc." Or, she might telephone her list and have the items delivered.

Today, the same housewife goes to the supermarket, with or without a list, and wheels her cart up and down the aisles. She has been conditioned by brand advertising but most of her buying is done on impulse.

[fol. 1001] Impulse buying has brought about a revolution in packaging practices. Actual time studies made in supermarkets show that it takes a housewife an average of 4 seconds to choose an item from a grocery shelf, but it takes her 20 seconds not to buy something. The package itself either provides this impulse to buy, or lacks it.

The significance of impulse buying was not lost when the Savorlock cans were designed. Continental called upon an outside Industrial Designing firm, informed them of the approximate cubic capacities that were desired in these containers, and of manufacturing restrictions, and asked their recommendations on proportions and special features. To meet proper design criteria, the designers specified diameters of 204 and 305, which were accepted by Continental even though they were non-standard. Our two Savorlock cans are now 204 x 315 and 305 x 507. They represent one of the first "styled" metal cans ever offered by the industry, and with the other special features are a real Continental first.

Display

In the pleasing proportions of the Savorlock cans, we have provided the important element necessary for a su-

perior package display. A second requirement has been met in the stacking feature which enables the storekeeper to build up the display to the full height of the shelf.

Because metal cans are so compact, we have fulfilled another requirement of the retailer, which is to get as many units as possible per running foot of shelf. With all products competing for display space, this is an important merchandising consideration for the packer as well as for the retail storekeeper.

A final and conclusive element of the display needed to catch the eye of the "impulse buyer" is the decoration of the package.

[fol. 1002] On the Savorlock can, as contrasted to labeled jars, we provide not only excellent lithography but also a greater space for design and text. Continental is unsurpassed in the industry in the excellence of its lithography. Too, many of the outstanding lithographed designs on grocers' shelves today were created in Continental's Art Department.

The merchandiser who is looking for a new packaging vehicle to move his product off the self-service shelf will find much to appeal in the Savorlock cans. They have the attributes which will put his product in the "4 second" category and keep it out of the "20 second" category.

Container Costs

Our Savorlock containers are the first reclosure cans of this type ever to be produced on high speed lines. Thus, because our costs are reasonable, the containers can be priced advantageously in comparison with other containers with similar features. It is reasonable to state that there is no other container being offered today that combines so many advantages in one package and which is so low in price.

The big volume unit which our new container is expected to replace in large part is the glass jar. Glass jar prices are not consistent in that they are influenced by the potential volume of the product to be packed, and by the degree of competitive threat from cans and other types of packages. Also, glass is priced on a delivered zone basis. Nevertheless, the pricing level of Savorlock cans in reshippers is

generally competitive with glass jars in reshippers, although in certain locations the first cost will be greater. This latter point is not necessarily an argument in favor of glass, as the prime interest of the marketer is in a distinctive package that will sell his product. In that area, the Savorlock can is worth whatever additional cost is involved.

[fol. 1003] Shipping Costs

Prospects who are comparing the merits of Savorlock cans versus glass jars will find that the adoption of the Savorlock can will enable them to realize substantial savings in the shipment of filled containers to point-of-sale. This is brought about not only by the lighter gross weight of the metal container but also because many more cases of cans can be loaded in a railroad car. Glass is heavy and fragile and usually can be stacked only part way up in a railroad car, while cases of cans can be loaded right up to the roof.

Here are some significant data with typical comparisons, glass of average weight versus Savorlock cans. In establishing filled-case weights we have assumed 2-oz. of product for the 204 x 315 size and 6-oz. of product for the 305 x 502 container. The comparative data given for glass jars assumes the same product weight:

	2-Oz. Size		6-Oz. Size	
	Savorlock		Savorlock	
Wt. Per Case of	Jars	Cans	Jars	Cans
Filler Containers	9#	6.6#	19#	15.8#
No. of Filled Cases				
Per Carload	4,500	7,300	1,800	2,700

The above will show that a packer buying Savorlock cans will realize major overall savings in the cost of getting the product to the retail outlet. This is a particularly important consideration for firms that pack at central locations and distribute over a wide marketing area.

Savings in Production

There are important savings realized in production that will benefit the packer who switches from glass jars to Savorlock cans.

[fol. 1004] Probably the one thing that gives most con-

cern to the packer of food products is broken glass. When a jar shatters in a filling line, production stops until all the glass is cleaned up. In addition, to assure that no particles will remain in any container, a certain number of jars, including product, both before and back of the broken container must be scrapped.

In the case of Instant Coffee, as many as 48 jars of product are thrown away every time one jar breaks. In a 6-oz. line, this would mean a loss of over \$50.00 for each stoppage caused by a broken jar.

Savorlock cans do not break!

Product Protection

A packer giving thought to the adoption of the Savorlock can will want to know, "Will this container protect my product for a normal shelf life period?"

Obviously, each product candidate will have its own requirements, and in some cases test packs arranged through Customer Research will have to provide the answer. However, in the specific case of Instant Coffee, the answer is "Yes". Presumably the same answer will apply to other such products which are packed atmospherically and which must be protected against moisture or odor pick-up.

Metal R & D has a long test pack experience with the Savorlock can, employing many variables in structure and vapor-seal. The product used in their test was Instant Coffee, which is one of the most hygroscopic of food products being marketed today.

These test packs have been evaluated after both accelerated and long-term test conditions. The basic tests were made in the laboratory, but served to indicate what might be expected under commercial conditions of packing, shipping and storage.

More recently, in conjunction with a major market test of Instant Coffee in the Savorlock can, our Metal Research and Development Department has been able to confirm [fol. 1005] their original findings. Evaluations have been made of cans filled and sealed on a production basis and distributed in normal commercial channels. Accelerated laboratory tests of cans taken from the production line have demonstrated the efficacy of the vapor-seal. Also, cans taken

from retailers' shelves over four months after filling have demonstrated no appreciable moisture pick-up.

These comprehensive evaluations have given us the assurance that Continental's Savorlock containers can be offered for Instant Coffee and other hygroscopic products as a package that will offer the necessary protection for a normal shelf life period. From these tests, also, Metal R & D has developed information which will enable our Customer Research to recommend specific adhesives and adhesive applicators which the packer should use in commercial production to achieve the necessary vapor-seal.

Products

No attempt will be made here to list all of the product candidates for Savorlock cans, as almost any powdered or granulated product, food or non-food, is a possibility. We will list some of the more important categories, which should stimulate in the minds of our sales force the generation of a long list of specific items for which this container will answer a packaging need.

Instant Coffee

With over 30% of all coffee, cup for cup, marketed in the instant form, this product seems to represent the greatest potential for Continental's Savorlock can. In 1955, about 1.3 billion oz. of instant coffee, with a total retail value of \$350 million, was consumed in the United States. The forecast of package usage in 1956 is 370 million 2-oz. containers, and 123 million in the 4-oz., 5-oz., and 6-oz. size, with the trend toward increased usage of the 6-oz. package.

[fol. 1006] As is well-known, practically all instant coffee is marketed in glass jars. The advantages of the Savorlock can over glass, plus the association by the consumer of coffee with tin, should enable us gradually to take over a sizeable portion of this market.

Tea, Soluble Tea and Tea Bags

This is another important area for potential Savorlock can sales. More than 160 million packages were used in the marketing of these products in 1955.

Chocolate and Cocoa

The Savorlock can affords many advantages over packages now considered standard for the marketing of chocolate and cocoa. Being metal it can be packed much faster than the paper-bodied oblong containers which tend to jam in the packing line. Full opening makes it easier for the housewife to spoon out the product, and the lock top of the Savorlock can is simple to open and reseal. The oblong can, with its plug reclosure, is very unhandy from the consumer standpoint.

The estimated unit market in this product category is 88 million packages.

Non-Fat Dry Milk

125 MM units of non-fat dry milk are sold annually. Most packers use a labeled cardboard box with an inner package, but one company is successfully merchandising the product in glass. The large Savorlock can should be very interesting to the concerns who are looking for a superior package to compete with the glass jars.

Dehydrated Soups

These items have had good acceptance by the consumer, with approximately 138 million packages sold annually. Our small Savorlock can is of a good size for a small serving of soup, and the larger container will make an "economy" serving for a large family, or several smaller servings. The [fol. 1007] reseal feature of the Savorlock can is important in connection with this latter use. As these products are sometimes gas packed, it may be necessary to arrange test packs through Customer Research.

Prepared Sweetened Chocolate Mix

Savorlock containers can be a powerful merchandising vehicle for those products which are now packed principally in glass. Prepared chocolate mixes are priced higher than unsweetened chocolate or cocoa and are merchandised aggressively. The package cost is a relatively small part of total retail price.

The estimated usage in this product category is 75 million containers.

Baking Powder—Baking Soda

The principal package used for these products is the paper box, but some concerns are now using cans. Ordinarily, a product as inexpensive as this could not afford additional package costs. However, because the item is purchased infrequently by the housewife, and consumed over a relatively long period of time, a superior package offering additional consumer convenience should enable the product to be marketed at a price premium.

About 190 million packages of baking powder and baking soda are sold annually.

Laundry Starch and Powdered Bleach

These products are examples of potential non-food candidates for the Savorlock can. They have a potential of 90 million packages annually.

Spices and Vegetable Flakes

While the standard Savorlock can may not be presently suitable for spice and flavorings which must be sifted (such as ground pepper, paprika, etc.) there are other spices and [fol. 1008] flakes for which the container is exceptionally good. We are thinking of such products as peppercorns, whole cloves, dry mustard, parsley flakes, onion flakes, dehydrated garlic, Rosemary, Oregano, Anise Seed, Basil Leaves, etc. Many of these are now being marketed in round reclosure type cans.

Pharmaceuticals

Items of the general nature of Boric Acid (18 MM units) and Epsom Salts (16 MM units) are the types of pharmaceuticals for which these containers would be an excellent package. Aspirin tablets and vitamins are logical candidates.

Brown Sugar and Confectionery Sugar

These two products should be good candidates for the larger Savorlock container, as the standard paper box with overwrap being used does not protect the product. The housewife has a problem in keeping the product dry after the package is opened, and many times it picks up moisture

during normal shelf life periods and comes to the consumer in caked form.

Generally, one package of brown sugar or confectioner's sugar is used over an extended period of time in the home, and must be stored between uses. The convenience of the Savorlock can and its positive reseal feature should provide a merchandising advantage which will enable the packer to get a premium price for the product in the Savorlock can and still increase sales. These two products represent a potential for over 100 MM packages.

Peanut Butter

This is a "hard to hold" product, in that Peanut Butter will creep because of its oily texture. The Savorlock can has not been tested commercially with this product but it does seem to have possibilities of being an excellent retail package for Peanut Butter as a replacement for glass. Packers of Peanut Butter should be given an opportunity [fol. 1009] to see the can, with the thought that those who are interested will want to arrange for test packs and perhaps a retail market test.

Estimated potential of packages for Peanut Butter amounts to 150 million units annually.

Miscellaneous Products

Other candidates for Savorlock cans are represented in such product areas as: Instant Gravy Mix, Bouillon Cubes, Powdered Egg Whites, Dry Coconut, Prepared Dips for Fried Foods, Bread Crumbs, Hard Candy, Cookies, Dessert Powders, Dry Rice, Instant Potatoes, Banana Flakes.

Conversion of Glass Packing Lines

The filling and capping of Savorlock cans is essentially the same operation as the filling and capping of glass jars. Many potential customers in addition to those in the Instant Coffee field already have glass jar lines. The following general information will show that the conversion of a glass jar line to a Savorlock can line is relatively simple and inexpensive:

- 1—*Materials Handling*—There probably will be no changes necessary in the carton conveyor handling

system, either direct to an unscrambler, or through storage on pallets. A greater number of cans than jars can be handled per pallet.

2—*Unscrambler*—It may be necessary to make a slight adjustment on the unscrambler because of the top bead of the Savorlock can.

3—*Slat Chain Conveyor*—Usually, the conveyor is adjustable and thus adaptable to the conveying of cans.

4—*Cleaner-Blower*—This equipment may require a new twister to take care of the diameter and height of the can, which is different from that of a standard jar. It may be necessary to adjust the pusher to a different height.

[fol. 1010] 5—*Labeler*—Presumably, the cans will be lithographed and the labeler will not be used. It can stay in the line, operating as a conveyor. It may be necessary to make a slight adjustment of the V-belt to avoid running on the top bead of the can.

6—*Filler*—Change parts will probably be required for the filler. The cost, depending upon the type of filler used, should be approximately \$850.00.

7—*Gluer*—Because the adhesive recommended for cans is different from that ordinarily used for glass, the type of adhesive applicator used on a jar line may not be suitable for cans. Information on the recommended adhesives and type of applicator will be furnished on request by Customer Research.

8—*Capper*—The cost of change parts for the capping machine should range from approximately \$180.00 to \$425.00 for a 4-spindle machine; from \$270.00 to \$1,125.00 for a 6-spindle machine; and from \$360.00 to \$1,500.00 for an 8-spindle machine.

9—*Caser*—A new grid may be required for the caser. The cost, depending upon the type of caser used, should be approximately \$500.00.

The above figures are estimates, and are only to serve as a guide in indicating what may be involved in equipping a jar line to handle the Savorlock can.

The Division Can Handling Equipment Engineers should be called in as consultants and advisers on line change-overs from glass jars to cans.

[fol. 1011] General

The introduction of this excellent new container will open numerous doors to the Continental Can sales representatives. In the case of many prospective customers, we shall have an opportunity to make best use of the team approach.

Division and Head Office Sales will be available to assist Districts in developing the best sales story, or in making the actual sales presentation to important prospects. Customer Research should be called in with reference to test packs and container specifications for individual products, and should also be consulted concerning recommended adhesives. The Can Handling System Department can supply a great deal of assistance in connection with the conversion of a glass jar line, or in laying out a new line for Savorlock cans.

Because of the importance of the package as a merchandising vehicle, the creative ideas of the Art Department can be used effectively in providing a customer with a colorful package that will increase his sales, prestige, and profits.

[fol. 1012] GOVERNMENT'S EXHIBIT 405

June 1956.

To: Division Managers of Sales,
District Sales Managers

Subject: Savorlock Cans

Re: Freight Allowance—Instant Coffee

Price Lists for the 204 x 315 and 305 x 507 Savorlock cans show selling prices f.o.b. Passaic, N. J.

For packers of instant (soluble) coffee *only*, a carload freight allowance will be made up to \$1.03/cwt. (\$1.00 plus 3% transportation tax). This pricing policy will hold until and unless specifically rescinded.

The purpose of this allowance is to provide an incentive for packers of instant coffee to switch from glass jars to cans. Jars for instant coffee are sold on a delivered basis, and the effect of the allowance on cans is to make our pack-

age competitive on a first-cost delivered basis in an area where many large instant coffee packers have plants.

For all products except instant coffee, Savorlock cans will be sold F.O.B. Passaic, New Jersey.

RDC/ah

R. D. Cleaves.

[fol. 1013] From: R. D. Cleaves,
June, 1956.

Continental's New Savorlock Can

The Product Bulletin which has just been issued on the Savorlock cans gives a considerable amount of general information concerning these containers. As a ready reference for sales representatives, we have tried to anticipate some specific questions which may be asked by prospects for the cans, and this New Development Letter is designed to provide the answers.

Q. How would one describe the Savorlock cans?

A. The Savorlock cans, which come in two sizes, can be described as: Round lock top cans; side seam soldered outside, with covers fitted with pulpboard liner and glassine tamper-proof seal.

Q. What sizes are available?

A. The standard sizes are the 204 x 315, and the 305 x 507.

Q. Can they be produced in other sizes?

A. These are the only sizes which we are teoled to make, or which we plan to make in the foreseeable future. Height change parts and diameter change parts are very costly for these particular containers, and consideration would be given to different dimensions only if firm requirements were to run into several millions of cans.

Q. Are samples available?

A. Yes. Savorlock samples in lithographed stock design are being supplied to each district sales office for presentation to prospects. Additional samples, lithographed or plain, may be secured from Passaic #30 on a regular sample order.

Q. What are the particular advantages of the Savorlock can which should be pointed out to prospects?

A. The Product Bulletin discusses the special characteristics of these containers at some length. In the actual sales presentation to prospects, it is suggested that several cans

of each size be shown in order to demonstrate the excellent display characteristics of the Savorlock containers, as they would be stacked on a shelf. By itself, one can may not appear to be very large. However, a solid bank display makes the can seem much larger.

Q. Where are Savorlock cans being manufactured?

A. Both cans will be manufactured at Plant #30 Passaic, New Jersey.

Q. When will these lines be in operation?

A. Both lines are expected to be in commercial production about August 1, 1956.

Q. Are there any limitations on orders as to minimum quantities?

A. The minimum acceptable order for a lithographed 204 x 315 can is 100,000. On the 305 x 507, the minimum order for a decorated can is 50,000.

Q. Will minimum orders, as stated above, be run as soon as received?

A. It is expected that, as production gets under way, orders may have to be pooled to make a minimum run of 500,000 of either size. As orders are placed, the plant will give shipping promises.

Q. Can Savorlock cans be vacuum packed or gas packed?
[fol. 1015] A. No. However, they are designed to prevent moisture pick-up in the product during normal shelf life periods.

Q. How is the moisture seal affected?

A. Inside the covers of the Savorlock cans is a disc of waxed paper backed up by a cardboard disc. In the filling line adhesive is applied to the top of the curl of the can body, and this causes a seal between metal and paper as the can is capped. After the seal has been removed by the housewife, the pressure of the cardboard disc affords continued protection against moisture absorption.

Q. How are the cans shipped?

A. Savorlock cans are shipped only in reshippers. The 204 x 315 can is packed 6 x 4 (one layer) and the 305 x 507 can is packed 4 x 3 x 2 (two layers). The plant is not equipped to ship bulk, in bags, in large returnable cartons or in throw-away cartons.

Q. In what form are the cans shipped; with covers

affixed and bottoms loose, or with bottoms double seamed on and covers shipped loose?

A. The 305 x 507 can is supplied only one way, which is with the bottoms double seamed on and with covers shipped separately. The smaller, 204 x 315 container can be supplied either way. However, we strongly recommend that they be ordered with bottoms double seamed on and covers shipped loose for capping at the customer's plant. We have found through actual shipping experience that there is considerable damage to lithography if the cans are shipped with the bottom end open. On such small containers where display is so important, much of the sales appeal is lost when the cans are badly scratched.

[fol. 1016] Q. Would the packer derive any production advantage if he were to take the 204 x 315 can with the caps affixed, with bottoms shipped loose to be double seamed at his plant?

A. We do not see that there would be any manufacturing advantage which would offset the problem of scratched lithography. There would be no increased line speed over a line with capper, as the bottleneck is in the filler. Also, from a standpoint of expense, the line with double seamer would probably be more expensive than a line with a capper. Most of the concerns who will be considering the Savorlock can probably will already have a jar filling and capping line. As pointed out in the Product Bulletin the cost of changing over to a can capping line is reasonable.

Q. I have a prospect who merchandises his own brand of Instant Coffee which is packed by a contract packer. Are there any contract packers who are equipped to fill cans?

A. American Home Foods (Freehold, N.J.) and Tenco, Inc. (Linden, N.J.) are equipping to fill and pack Savorlock cans.

Q. If additional information is needed, where shall inquiries be made?

A. Questions on price information not contained on the Price Lists should be directed to Contract & Price. Production Planning will be able to supply information on scheduling of cans out of Passaic #30. If test packs are required, or a recommendation for can specifications for a particular product, the assistance of Customer Research should be solicited. The services of C.H.S.D. should be used to assist

customers in planning equipment to fill and cap the Savorlock cans. Sales policies should be taken up with Division Sales Managers. Both Division and Head Office personnel [fol. 1017] can be called upon to assist in making the best possible sales presentation to major prospects.

[fol. 1018]

GOVERNMENT'S EXHIBIT 405A

Packaging Engineering Report

Progress Report No. 1

November 21, 1956.

Test Pack Of American Home Foods' Soluble Coffee, in Savorlock Cans

Test pack of soluble coffee in 2 oz. Savorlock cans to test the moisture-vapor transmission characteristics of various tamper-proof seal materials and adhesives.

Eight Week Examination

Purpose

The purpose of this test pack was to evaluate the performance of several tamper-proof seal materials and adhesives with respect to moisture-vapor transmission. These materials were used in making a test pack of American Home Foods' soluble coffee in two ounce Savorlock cans.

Summary of Results:

1. Results at this time indicate that the container giving the best performance with respect to moisture-vapor transmission is the Savorlock can with a tamper-proof seal of .00035 aluminum foil laminated to 25# super calandered pouch stock. This material is supplied by the Shelmar-Betner Division.
2. The performance of commercially packed American Can Company soluble coffee can appears to be

somewhat better than the performance of the commercially packed glass jar. The performance of the commercially packed American can, and the Savorlock can having a seal of .00035 aluminum foil laminated to a paper backing with Irving pressure-sensitive wax in place of adhesive were comparable with respect to moisture-vapor transmission.

3. The performance of the Savorlock can having a 57 # glassine seal and EC-871 adhesive appears to be comparable to the commercially-packed glass jar.
4. All other variables appear to give poorer performance than the glass jar with respect to moisture-vapor transmission.

Recommendations

Further information will be available after the conclusion of the twelve week storage period. A report will be written giving a final evaluation of all of the variables with respect to moisture-vapor transmission at that time.

Introduction

The American Home Foods division of American Home Products Company which packs G. Washington instant coffee as well as private labels has been considering using the Savorlock can as a package for their product. At the present time their G. Washington label is being packed in a 2 oz. modified single friction can manufactured by the American-Can Company.

[fol. 1019] In order to demonstrate the performance of the Savorlock can with respect to moisture-vapor transmission, and at the same time test some new tamper-proof seal materials and adhesives, a test pack was made at the American Home Foods soluble coffee manufacturing plant on September 14, 1956. Some of the containers were retained by American Home Foods for their own evaluation, while the majority of the cans were returned to Chicago for moisture-vapor transmission tests.

Materials

The variables tested include three adhesives and six tamper-proof seal materials. The codes which were packed are as recorded in Table I at the end of the report.

The EC-871 and EC-917 adhesives are made by the Minnesota Mining and Manufacturing Company. The XA-143-77-1044 adhesive is made by the Union Paste Company. The 57# glassine is supplied by General Felt, Inc. The papers with Irvington pressure-sensitive wax were samples obtained from the Irvington division of the Minnesota Mining and Manufacturing Company. The Marasafe paper was supplied by the Marathon Corporation, while the Rhineland material came from the Rhineland Paper Company.

The cans used were 2 oz. Savorlock cans with promotional lithography obtained from Passaic #30.

The cans were filled on a commercial filling machine with approximately 2 ounces of soluble coffee and then closed by hand.

The Union Paste Company, XA-143-77-1044 adhesive sample was curdled when opened, and the solid fraction would not go into solution upon vigorous shaking. Therefore the sample was used just as it was received.

Apparatus

The caps were applied to the cans and jars using a Spring Torque Tester manufactured by the Owens Illinois Glass Company.

The humidity cabinet in which the cans were stored was an Aire Regulator Cabinet manufactured by Food Technology, Incorporated.

The can samples were weighed on a Gram-Matic balance manufactured by E. Mettler Company, Zurich. The jars were weighed on a high capacity pan balance.

Procedure

All of the Savorlock cans were closed by hand. Where adhesive was used, it was applied by means of a small rubber roller approximately one inch in diameter and six inches long. A thin layer of adhesive was poured into a shallow enamel tray, and the roller was coated by rolling it in the adhesive. The roller was then rolled over the top curl of the can leaving a ring of adhesive. The quantity of adhesive applied to the top of each unit was not determined.

Covers containing chipboard liners and tamper-proof discs were applied to the cans with a force of 30 pound-inches of torque.

[fol. 1020] The American Can Company cans and the glass jars were packed commercially, samples being removed directly from the closing line.

One addition sample was taken from each of the following codes: A, B, C, D, E, F, G, H, J, and L. These samples were used to determine the initial moisture content of the soluble coffee when packed.

The cans and jars were shipped to Chicago by truck. The percent moisture contents of the samples for initial moisture determination were obtained by drying samples of known weight at 65°C for five hours at 28 inches of vacuum. The remaining samples were weighed and placed in a humidity cabinet where the temperature was maintained at 100°F and relative humidity at approximately 93%. The containers were removed at two week intervals, reweighed, and returned to the cabinet. Moisture pickup was determined by subtracting the original weight of the container from the weight after storage. The moisture pickup of the cardboard liner and can was corrected for by subtracting the net pickup of the empty Savorlock cans (code N) from the net pickup of the full cans. By this method it was possible to calculate the amount of moisture picked up by the soluble coffee. At the conclusion of the test, the moisture content of the coffee samples will be determined by drying samples of known weight. By comparing these figures with the initial moisture content figures already obtained, we will have a second method for determining the moisture pickup in the soluble coffee.

Data

The moisture pickup data are recorded in Table II at the end of the report. Data are recorded as the average, minimum, and maximum moisture pickup in milligrams per can for each variable. Cans which did not have complete seals (with the exception of codes B and C) were not included in the averages.

Analysis of Results

An analysis of the data at this point in the test permits one to point out several indicated results:

- (1) The best variable with respect to moisture vapor transmission was the Savorlock can with the tamper-proof seal of .00035 aluminum foil laminated to 25# super calandered pouch stock supplied by Shelmar-Betner. These tests indicate that the shelf life of this variable should be several times that of any other variable.
- (2) Neither of the new adhesives tested (codes D and E) appeared to be superior or even comparable to EC-871 in performance.
- (3) Of the new tamper-proof seals tried, the Shelmar-Betner material (code J) is the best. The Irvington laminated aluminum foil with pressure-sensitive wax (code G) also appears to perform well. In contrast, the Irvington glassine with pressure-sensitive wax (code F), the 200 Marasafe with pressure sensitive wax (code H), and the Rhineland 58# Silver Clarophane (code L), appear to be completely unsatisfactory with respect to moisture-vapor pickup.

H. P. Lankelma, Jr., Special Product Section.

HPL:jv

[fol. 1021]

Table I					
Code	No. Cans for CCC	No. Cans for Customer	Liner	Adhesive	Sealing Conditions
A	48	24	57 # Glassine	EC-871	Seal glued on.
B	24	—	57 # Glassine	EC-871	Cap in place. Seal glued on.
C	24	—	57 # Glassine	—	Cap removed. Seal not glued on.
D	48	—	57 # Glassine	EC-917	Cap in place. Seal glued on.
E	24	—	57 # Glassine	XA-143-77-1044	Cap in place. Seal glued on.
F	24	24	Glassine with Irvington Pressure-sensitive wax	—	Cap in place. Seal seated by cap.
G	20	—	.00035 Al. foil laminated to paper backing with Irvington pressure-sensitive wax	—	Cap in place. Seal seated by cap.
H	24	—	Series 200 Marasafe Paper with pressure-sensitive wax	—	Cap in place. Seal seated by cap.
J	24	72	Shelmar-Betner 25 # Super calandered pouch stock laminated to .00035 Al. foil	EC-871	Cap in place. Seal glued on.
L	24	—	Rhineland 58 # Silver Clarophane	EC-871	Cap in place. Seal glued on.
M	24	—	Commercially packed ACC cans		Cap in place.
N	24	—	57 # Glassine (Empty Savorlock cans)	EC-871	Seal glued on.
P	24	—	Commercially packed glass jars		Cap in place.

[fol. 1022]

Table II

Moisture Pickup/Can in Milligrams
(Corrected for Moisture Pickup in Cardboard Liner)

Code	Average	Min.	Max.
A	218	154	400
B	2105	260	4967
C	1582	994	3441
D	254	171	436
E	261	187	478
F	434	278	584
G	147	33	264
H	1053	761	1889
J	32	0	78
L	511	419	578
M	152	3	565
P	198	124	339
N (control)	88.6		



Sales Information

EASY OPENING
RIP-STRIP WITH
IMPROVED SCORING!

G.
S.
CAN.

BEADED FOR
ADDITIONAL
STRENGTH!

FINEST
LITHOGRAPHY!

CONTINENTAL'S
COFFEE
CONTAINER



Sales Information

CONTINENTAL © CAN COMPANY

100 East 42nd Street

New York 17, New York

[fol. 1024] possible after grinding. Continental Can Company offers its customers the last word in cans for packing coffee under a very high vacuum in order to remove the flavor-robbing oxygen. The coffee packer who uses Continental cans has a container that will support his advertising claims and guarantee "roaster-freshness" to his customers.

The Advantages of Vacuum Packing in Cans

During the war the coffee roasters were forced to use glass and paper containers for the packaging of their product. This gave the glass people the sole responsibility for handling the vacuum packed portion of the total. The glass manufacturers did an admirable job on this in producing jars and vacuumizing equipment but their heyday seems to have passed.

In spite of a price advantage arising from the use of glass, the vacuum coffee can has made a strong come-back. In almost all sections of the country and with all grades of coffee, the vacuum can has replaced glass to the full extent of their availability. The reason is obviously that the vacuum can is the ideal package for coffee.

The roaster sells flavor and aroma as well as coffee and this must be protected. The tamper-proof hermetically sealed can as free of oxygen as commercially feasible is the answer to their packaging problem. The can is strong, durable, light-weight, positive in its seal and convenient to use and handle from the roasters plant to the ultimate consumer.

Further, the can possesses many other advantages that are applicable to the roaster, wholesaler, retailer and consumer. They are as follows:

Advantages of Cans to the Roaster

1. Coffee is protected from light in cans. Light accelerates the rate of development of rancidity of coffee packed in glass jars.
2. Breakage is entirely eliminated and the extra care in handling to prevent breakage of the glass jar is not necessary.
3. Cans are lighter and more compact and thus are easier to handle in the roaster's plant.

4. Cans provide more area which can be lithographed to provide neat and distinctive labeling for brand name association.
5. Coffee in cans is less expensive to ship by common carrier because of less weight. The roaster pays the freight to destination in all instances, therefore, this is an important factor in overall costs.

[fol. 1025] Advantages of Cans to the Wholesaler

1. No loss through breakage.
2. Lighter to handle.
3. Less storage space required.
4. Delivery trucks can carry more cans due to weight and compactness.
5. Lower freight costs of shipments made by common carrier because of less weight.

Advantages of Cans to the Retailer

1. Cans stock on shelves better than jars.
2. No loss through breakage.
3. Larger variety of brands may be displayed in smaller shelf space.
4. Less care is needed in the handling of cans.
5. Neater appearance; distinctive lithographed labeling that won't come off.
6. The housewife will save glass jars, but then they clutter up her pantry and she won't buy any more coffee in glass.

Advantages of Cans to the Consumer

1. Coffee arrives at the home fresh and in better condition.
2. Cans are more easily opened than the Ultra-Vac glass jar without damage to tablespoon, which is the recommended method of opening the latter.
3. Easy to replace cover on can.
4. Opening the glass jar sometimes bends and dents the cover so it does not fit when replaced, or it cannot be replaced.
5. No loss through breakage.

[fol. 1026] Vacuum Packed Coffee—Glass Competition

The glass jar which is being offered most generally by the Owens-Illinois Glass Company is their Duraglas Ultra-Vac jar with a 66mm. press-on cap. The comparison shown below is made on this jar against our 1# can, size 5½" X 3½", lithographed 4 colors and varnished, packed in bags. This particular comparison is made on the basis of costs to a roaster in New York City.

	Can	Jar
Price	\$47.79 Per M*	\$43.46 Per M**
Label	—	1.30 Per M
Shipping Cartons (24s).....	5.21 Per M cans	Included in jar price
Freight on Empty Containers...	Delivered***	Delivered
Extra Cost for Packing Glass	—	—
Over Cans	—	5.10 Per M****
Extra Freight on Delivery of	—	—
Coffee in Glass Jars—Carload..	—	1.33 Per M*****
Comparative Weights:	\$53.00 Per M	\$51.19 Per M
Individual Unit Empty.....	6¼ oz.	13 oz.
Per M Containers Empty.....	418 lbs. in bags	1000 lbs. in cartons
Per Case (24s) Filled.....	36 lbs.	(approx) 47 lbs.

All figures shown are based on quotations in effect May 15, 1948.

Explanation of Asterisks:

* The can price is subject to a sales and servicing differential depending upon the customer's total purchases. The maximum of the two differentials of 3% would reduce this price by approximately \$1.46 Per M. The can price shown is our price f.o.b. Passaic for 4 color lithography based on the can made of 25 electrolytic tinplate throughout.

** This price includes jar caps at \$9.08 Per M and is for delivery in Official Zone #1. In Zone #2, the Southern territory, the price of glass jars is \$1.88 Per M higher and on the Pacific Coast it is \$2.50 Per M higher than that shown.

*** If cans are shipped to a roaster who is not located at a basing or equalization point, it will be necessary to add the freight to the roaster's plant to make a fair comparison.

**** This figure represents the increased cost of handling, filling and closing Ultra-Vac jars over vacuum cans. This comparative cost was furnished us by one of the large users of both glass and cans at comparable speeds.

***** Coffee packed in glass jars weighs approximately 25% more than if packed in cans. This figure of \$1.33 varies, of course, with the distance the filled packages are shipped. The \$1.33 is the average on carload shipments to wholesale grocers within a radius of 300 miles of New York City. L.C.L. shipments are substantially more expensive in glass than in cans. Also, the extra freight costs for glass increase in direct proportion to the distance shipped.

[fol. 1027] In spite of the price advantage of glass, the majority of coffee roasters are anxious to use cans to as high a percentage as possible. In certain areas there is some slight consumer preference for coffee in glass jars. This preference in many cases, is for the screw top jar and not

the Ultra-Vac as the latter has no re-use value for home canning.

The Owens-Illinois Glass Company have a high-speed vacuum closing machine. Our 78-VDS vacuum closing machine is comparable in speed and closes the can under a higher vacuum.

Coffee Closing Machines

Continental Can Company has several types of coffee closing machines. These models are known as 350 VSC type 3, 38 DS and 78 VDS. We recommend their use as follows:

1. Coffee packers with an annual output of 1 to 2 million cans—350 VSC type 3
2. Coffee packers with an annual output of 2 to 6 million cans—38 DS
3. Coffee packers with an annual output of 6 million cans and over—78 VDS

The necessary information, pictures, diagrams and layouts are listed in the catalogue. However, for purposes of convenience and completeness we shall again supply all the data for the above mentioned closing machines.

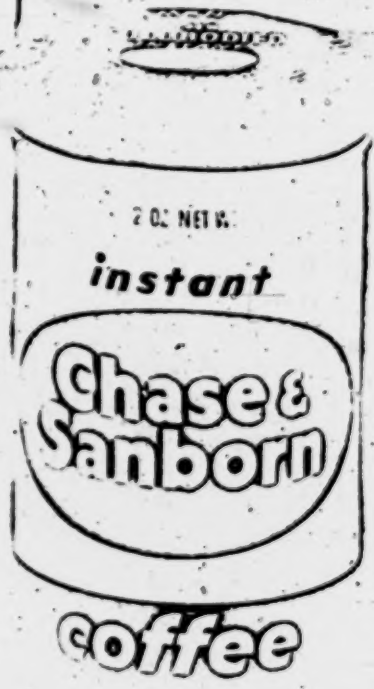
[fol. 1028]

GOVERNMENT'S EXHIBIT 407

Instant Coffee

by Chase & Sanborn...





...Cans by Continental

[fol. 1029]

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[fol. 1030] A New Chapter in the Story of Packaging

In the area of modern merchandising, today's big changes are taking place in the field of Packaging.

To Continental Can Company, the most diversified of all major manufacturers of containers, this creates an opportunity to be of increased service to packers with packaging that protects and moves their product. We constantly strive to meet newly developed products with the creation of the proper packages for them.

Thus, Continental's development of metal containers for instant coffee stems from recognition of the need for an improved package to hold this fast-growing product. We believe that the can is the proper package for instant coffee, just as it has already proved itself to be the proper package for ground coffee.

It is the aim of these pages to demonstrate that the metal container is the merchandising vehicle that will increase sales of Chase and Sanborn Instant Coffee, reduce packaging costs, and build up your profits on this product.

[fol. 1031] Coffee Packaging Costs Reduced With
Metal Cans

In recent weeks, the competitive battle for the instant coffee market has become more intense. Each packer is trying to whet the consumer's appetite for his brand through such sales techniques as premiums, "specials", etc. This situation is likely to prevail for some time and the probable result will be a continuing trend toward a lower general price level for the product.

Thus, package costs are becoming most significant to your company as an instant coffee packer—not only first costs but the increments that affect the ultimate price to the consumer, and the profit margin realized.

Continental Can Company has an answer for the problem: packaging costs can be reduced through use of metal containers, affording you major savings.

1.) Container Costs

First costs are important, and we have recognized that the can in cartons must be competitive with jars in cartons, including cost of labels. Although we presently

manufacture instant coffee cans only at Passaic, New Jersey, we are providing a freight allowance of \$1.00 per cwt., which will make your delivered cost at New Orleans reasonably close to the delivered cost of glass. [fol. 1032] The following prices are f. o. b. our Passaic, New Jersey plant, freight of \$1.00/cwt. allowed on shipments to New Orleans, Louisiana.

	2-Oz. Size	6-Oz. Size
Cans (Max. quantities)—bodies lithographed 3 prints on a coat, and tops 1 print on a coat	\$31.99/M	\$ 50.37/M
Cartons, printed 3 colors, 10M and over, current. (125 # for 2-oz.; 175 # for 6-oz.)....	\$60.00/M	\$111.00/M

Including cartons, we estimate that your delivered cost of cans at New Orleans, in carload lots, will be approximately 87¢ per case for the 2-oz. size and \$1.43 per case for the 6-oz. container.

2.) Freight Savings

Substantial savings will be realized by Chase and Sanborn in the shipment of filled containers to point of sale. Obviously, cans weigh much less than even lightweight glass, and more cases of metal containers can be loaded per railroad car or truck. It should be noted that the freight rates shown are current, and do not include the recently-announced 7% increase which the railroads have filed with ICC, to take effect March 7, 1956.

[fol. 1033] The rates given below are based on a 30,000# minimum per car, and include the 3% transportation tax.

Other factors used are:

	2-Oz. Size		6-Oz. Size	
	Jars	Cans	Jars	Cans
Wt. Per Case of Filled Containers..	9 #	6.6 #	19 #	15.6 #
No. of Filled Cases Per c/l.....	4,300	7,300	1,800	2,700

The figures for shipment from New Orleans to two locations will show the comparative shipping costs, and indicated savings, realized through the lighter weight of cans.

	C/L Frt. Rate	Frt. Cost Per Filled Case			
		2-Oz. Glass	2-Oz. Can	6-Oz. Glass	6-Oz. Can
New Orleans-Memphis...	.793	7.1¢	5.3¢	15.1¢	12.4¢
New Orleans-St. Louis...	.876	7.9¢	5.8¢	16.6¢	13.7¢

[fol. 1034] **Instant Coffee Can Design**
Dictated By Merchandising Needs

When the instant coffee can was in the first stages of development, fullest consideration was given to the ideal size and style of can, and type of reclosure. Continental recognized that the criteria for an acceptable package would have to include the following elements:

1. Suitability for product.
2. Ease of opening and reclosure.
3. Good display characteristics.
4. Reasonable cost.

The services of an outside industrial designer were secured to advise on style and proportions of the container. His recommendations, together with those of Continental engineering and sales people, determined the final styling of our instant coffee cans, confirmed as to their high marketing qualifications by coffee merchandisers.

We knew that we would have to furnish a "family" of can sizes and that the proportions of the 2-oz. can would be dictated by the necessary proportions for the larger sizes. It was recognized that a short can with a wide diameter would create opening difficulties for the housewife, especially in the 6-oz. and larger sizes. This problem made necessary a can having a greater height than diameter.

Display requirements also pointed in the same direction. Because the can, when first introduced, will usually be displayed next to glass jars, it was important that its proportions be such that the consumer would recognize that its capacity was as great as that of the jar.

It was found that none of our standard can diameters would give us the desired "tall" look while still maintaining a pleasing visual appearance. Design requirements dictated that we adopt a non-standard 204 diameter for the 2-oz. can, and a non-standard 305 diameter for the 6-oz. size. The result you see—nicely proportioned containers with excellent display characteristics.

[fol. 1036] **Retailers and Consumers Favor**
Metal Cans for Instant Coffee

There are two principal groups who must be sold on any packaged product offered for sale through retail stores.

The first of these is the retail merchant and the second is the consumer. We have approached both groups for their opinions on instant coffee packaging. Both favor the can!

To secure the storekeepers' reaction, Continental approached managers of stores where instant coffee is now being sold in cans. Their comments, for the most part, are typical of those which are almost always expressed when glass and metal packages are compared. Preference for cans is stated in such terms as: greater area for design and selling label, better mass display possibilities, less shelf space required, no breakage, lighter weight and easier handling of cases. With specific reference to Continental instant coffee cans, retailers are pleased that their display problems have been considered, and that we have made the can so that it will stack easily on the shelf.

We also know a great deal about consumer views of the can as a package for instant coffee, through two consumer reaction evaluations which were made for our 2-oz. can. The first of these surveys was conducted by National Family Opinion in 1954, and a more recent test by W. R. Simmons & Associates during the month of November, 1955.

The National Family Opinion report confirmed some points which we had anticipated, but it also brought some pleasant surprises. It was expected that the glass-packed [fol. 1037] product (controlling virtually all of the present market) would take the edge here—which it did—44% of the respondents preferred it. However, 29% stated their strong preference for the tin-packed product. Also significant was the fact that 25% stated they had no particular preference. This means that this sizeable group could be influenced to come into either camp. Therefore, it can be assumed that no prejudice would have to be overcome to influence slightly over half—or 54%—of the respondents to buy their instant coffee in tin. :

7 The Simmons & Associates test was conducted in stores where instant coffee is now being offered for sale in cans as well as in glass. There were some very significant findings which are interpreted to be even more favorable to the can than were the reactions obtained through the National Family Opinion test.

The salient point brought out by the more recent test is that the consumer, as represented by the respondents, has

very little reticence concerning purchasing instant coffee in tin. When given the specific opportunity to voice a *dislike* for the tin container, 75% had nothing at all to say against it, or, in effect, said they saw no difference between the glass and the tin.

On the *positive* side, when they were asked what they liked about the tin, the following types of answers were given:

- (1) Can't break it (49%)
- (2) See no difference (25%)
- (3) Stays fresh longer or holds flavor better (13%)
- (4) "Lighter", "easier to store", "handles well", etc.

[fol. 1038] These reactions signify that there is no basic resistance on the part of the consumer to a can for instant coffee.

Other reactions, however, brought out the fact that the consumer must be alerted to the fact that a new type of container is being offered. It was amazing that only 11% of the instant coffee users interviewed had ever heard of the fact that some brands are being packed in tin; this, in spite of the fact that brands in tin were present on the shelf in plain sight. The metal package will sell the product; but it must be merchandised and supported by promotion, if the housewife is to be aware of its existence. Then, her impulse will be to select her favorite brand in a can, or to switch to a new, but well-known brand because she has read about it in printed advertisements or learned of its availability through radio or television.

This situation is an opportunity for a hard-selling *brand* promotion. Many of the ~~factors~~ for successful promotion are present:

A new package.

A readiness to accept the package on the part of the consumer.

Availability of sales themes, derived from the reactions already *voiced* by consumers—"unbreakable"; "protected from light"; "re-use of container"; "easy to store"; "lighter"; "nice for travel"; "easy to dispose of"; "easier to spoon out"; etc.

• With a "family" of instant coffee cans in the two most popular sizes, a merchandising job with a new twist can be done in promoting Chase & Sanborn Instant Coffee to the public.

[fol. 1039] Metal Cans Offer Complete Product Protection to Instant Coffee

Any packer of instant coffee who is considering the metal can would have uppermost in mind the question, "In a can, will the product have a shelf life comparable to that in a jar"? The answer is "Yes".

The only qualification is that the packer must follow the capping and sealing practices recommended by the Continental Can Research and Development Department as providing the best finished package with the greatest resistance to moisture penetration. Specific comments as to equipment and adhesives will be found in the next section of this presentation.

A long period of experimentation, with many variables, is behind our determination of the best can structure, the sealing methods and the type of adhesives to be used. Numerous test packs were evaluated, after both accelerated and long-term test conditions. These basic tests were made in the laboratory, but served to indicate what might be expected under commercial conditions of packing, shipping and storage.

More recently, in conjunction with a major market test of the instant coffee can, our Metal Research and Development Department has been able to confirm their original findings. Evaluations have been made of cans filled and sealed on a production basis and distributed in normal commercial channels. Accelerated laboratory tests of cans taken from the production line have demonstrated the efficacy of the vapor seal. Also, cans taken from retailers' shelves [fol. 1040] over four months after filling have demonstrated no appreciable moisture pick-up.

These comprehensive evaluations have given us the assurance that Continental's metal containers can be offered to instant coffee packers as a package that will meet all the requirements of the product itself and offer the complete protection needed during normal shelf life periods.

[fol. 1041] Instant Coffee Packaging Lines can Be Quickly,
Economically Converted to Metal Cans

The conversion of a glass jar line to an effectively operating instant coffee can line is relatively simple. The costs will vary, depending upon the type of equipment used and the line layout, but in most cases such costs will not be excessive. Once the change parts have been received, the change-over from jars to cans and the change-back from cans to jars can be made with very little interruption of production.

Listed below are the various operations of an instant coffee line, with comments concerning adaptability to the handling of cans:

1.) Materials Handling

There probably will be no changes necessary in the carton conveyor handling system, either direct to an unscrambler, or through storage on pallets. A greater number of cans than jars can be handled per pallet.

2.) Unscrambler

It may be necessary to make a slight adjustment on the unscrambler because of the top bead of the instant coffee can.

3.) Slat Chain Conveyor

Usually, the conveyor is adjustable and thus adaptable to the conveying of cans.

[fol. 1042] 4.) Cleaner—Blower

This equipment may require a new twister to take care of the diameter and height of the can, which is different from that of a standard jar. It may be necessary to adjust the pusher to a different height.

5.) Labeler

Presumably, the cans will be lithographed and the labeler will not be used. It can stay in the line, operating as a conveyor. It may be necessary to make a slight adjustment of the V-belt to avoid running on the top bead of the can.

6.) Filler

Change parts will probably be required for the filler. The cost, depending upon the type of filler used, should be approximately \$850.00.

7.) Gluer

Because the adhesive recommended for cans is different from that ordinarily used for glass, the type of adhesive

applicator used on a jar line may not be suitable for cans. Information on the recommended type of applicator will be furnished on request, as will brand names of recommended adhesives.

8.) Capper

The cost of change parts for the capping machine should range from approximately \$180.00 to \$425.00 for a 4-spindle machine; from \$270.00 to \$1,125.00 for a 6-spindle machine; and from \$360.00 to \$1,500.00 for an 8-spindle machine.

[fol. 1043] 9.) Caser

A new grid may be required for the caser. The cost, depending upon the type of caser used, should be approximately \$500.00.

The above figures are estimates, and are only to serve as a guide in indicating what may be involved in equipping a jar line to handle the instant coffee can.

We recommend the services of our can handling equipment engineers as consultants and advisers on line changeovers from glass jars to cans.

[fol. 1044] Continental Can Company is proud to offer its "family" of metal cans to Chase & Sanborn.

These containers, now available to the instant coffee industry, should result in lower packaging costs, increased profits for the packer, and, potentially, a broadening of the Instant Coffee market through making possible a lower retail price level.

[fol. 1045] GOVERNMENT'S EXHIBIT 408

New Development
... for immediate sales action

Soluble Coffee Cans
204 x 315 2-Oz. Container

July 21, 1955.

From: R. D. Cleaves

Passaic #30 has now successfully completed the first production run of the 204 x 315 lock top soluble coffee can. The line will not operate during the last two weeks in July while Passaic plant is on vacation, but will be back in production about the middle of August.

Because of the anticipated heavy demand for the can, the available line production has been put on an allocation basis. Your Division has received its allocation and the distribution will be by the Division Sales Manager.

The Division Sales Manager will also determine sales policy within the Division and each District Office should direct questions concerning allocation and policy to him.

Inasmuch as this office is responsible for coordinating among the three Divisions, it is requested that we be kept informed, through copies of correspondence, of negotiations with your customers concerning the sale of our 2-oz. soluble coffee can.

The following information will be of value to you in discussing our soluble coffee container with your prospects.

Prices

Contract & Price is issuing a price bulletin on the 2-oz. soluble coffee can.

Manufacturing

The preferred method of manufacturing is to have the bottom end seamed on and caps shipped loose. The caps will have the waxed cardboard disc and the glassine vaporproof seal already inserted, and cans will be glued and capped by the customer.

[fol. 1046] There are several reasons for recommending to customers that the factory seam on the bottom end. In most cases, customers will have their own glass jar lines, or their product will be supplied by a contract packer who has a glass jar line. The cost of changing a jar line to a can line is relatively simple and inexpensive as contrasted to the building of a line for cans only, which would require a double seamer and other equipment.

Cans shipped with bottoms seamed on will not suffer flange damage and the incidence of scratched lithography will be kept to a minimum.

Cartons

The first commercial shipments from Passaic were made in 175# test reshippers, packed 24 to a carton. The cost of

these cartons, printed three colors, is approximately \$62.50/M cartons in lots of 10,000.

Presently, we are making some test shipments in 125# cartons which we believe will be sufficiently strong for 24 2-oz. cans of soluble coffee. If, as expected, the 125# cartons prove satisfactory, additional savings will be realized in carton costs.

Shipping Weights

The 2-oz. can, packed in 175# test cartons weighs approximately 150# per M cans. About 175M cans in cartons can be loaded in a 40' car and a 35' truck trailer will take approximately 100,000 cans.

Samples

Orders for plain tin samples may be placed with Passaic #30. If the cans are to be used by a prospect for a test pack, the order should state, "For test pack—Include adhesive."

Conversion of Jar Lines

The cost of converting customers' lines from jars to cans will depend upon the type of equipment used and the line layout. The services of Continental's Can Handling Equipment Engineers should be employed to assist customers in planning the change over. Once the change parts have been received, the change over from jars to cans and the change back from cans to jars can be made with very little interruption of production.

Listed below are the various operations of a soluble coffee line, and comments concerning adaptability to the handling of cans.

- 1) *Materials Handling*—There probably will be no changes necessary in the customers carton conveyor handling system, either direct to an unscrambler, or through storage on pallets.
- 2) *Unscrambler*—It may be necessary to make a slight adjustment on the unscrambler because of the top bead of the soluble coffee can.
- 3) *Slat Chain Conveyor*—Usually the conveyor is adjustable and thus adaptable to the conveying of cans.

- [fol. 1047] 4) *Cleaner, Blower*—This equipment may require a new twister to take care of the diameter and height of the can, which is different from that of a standard jar. It may be necessary to adjust the pusher to a different height.
- 5) *Labeler*—Presumably, the cans will be lithographed and the labeler will not be used. It can stay in the line, operating as a conveyor. It may be necessary to make a slight adjustment of the V-belt to avoid running on the top bead of the can.
- 6) *Filler*—Change parts will probably be required for the filler. The cost, depending upon the type of filler used, should be approximately \$850.00.
- 7) *Gluer*—Because the adhesive recommended for cans is different from that ordinarily used for glass, the type of adhesive applicator used on a jar line may not be suitable for cans. Information on the recommended type of applicator will be furnished on request, as will brand names of recommended adhesives.
- 8) *Capper*—The cost of change parts for the capping machine should range from approximately \$180.00 to \$425.00 for a 4 spindle machine, from \$270.00 to \$1,125.00 for a 6 spindle machine, and from \$360.00 to \$1,500.00 for an 8 spindle machine.
- 9) *Caser*—A new grid may be required for the caser. The cost, depending upon the type of caser used, should be approximately \$500.00.

The above figures are estimates, and are only to serve as a guide in indicating to prospects what may be involved in equipping a jar line to handle a 2-oz. soluble coffee can.

6-Oz. Soluble Coffee Can—305 x 509

Equipment is now being built for the manufacture of a 305 x 509 soluble coffee can. The line will be installed at Passaic #30 and is expected to be in production during the first quarter of 1956. Because the 6-oz. can will be the companion container to the 2-oz. can, the sales pattern will parallel that of the 2-oz. container. In other words, the customers buying the 2-oz. soluble coffee can will automatically participate in the production of the 6-oz. line.

General

The advantages of the soluble coffee can over the glass jar are obvious. The can has been designed specifically for this product, and our evaluation of the can over a long period of time shows that it compares favorably with the jar in such important respects as attractiveness, ease of opening, reclosure feature, and vapor seal.

From this point of equality, the specific advantage to the packer is the lighter weight which affords freight savings up to approximately 40% in the filled and cased product. A further saving is realized in the elimination of the separators now used by most packers in shipping jars.

[fol. 1048] We expect to gain a real sales advantage with our soluble coffee containers and believe that in a relatively short time the Continental soluble coffee container will be a major factor in this product field.

RDC/wv

[fol. 1049] GOVERNMENT'S EXHIBIT 409

Continental Can Company, Inc.
100 East 42nd Street
New York 17, N. Y.

Mr. W. W. Hodgson
#44 San Francisco

August 18, 1955.

To: Sales Department List A-2

Subject: Soluble Coffee Can

Re: 204 x 315 2-Oz. Container

It is now general knowledge in the Coffee Industry that J. A. Folger & Company, Kansas City, Missouri, is making a major market test of their soluble coffee in Continental's 2-oz. can. The test is being made in twelve cities in the Middle-West with Waterloo, Iowa as the key test area. At Waterloo, an independent market research organization is

securing detailed consumer reactions which will be used as a basis for interpreting data in all test cities.

Folger is interested in a can for soluble coffee because they recognize the strong sales features of the can as compared to the glass jar. The following are particularly compelling.

1) The consumer associates coffee with the metal can

This is best demonstrated by what happened after World War II when metal was again available to pack ground coffee which had been merchandised in glass jars during the metal shortage. Even though the glass manufacturers had been afforded a real opportunity to entrench themselves in this field, and were quite confident that the key opening coffee can was a dead issue, the consumer proved that wrong. It is expected that this same association, and preference, will eventually make itself felt in the case of soluble coffee.

2) The can dominates the food container field.

A glance at any grocery store shelf will support this statement and the reasons for the dominance of cans are not hard to find.

Packers prefer cans over glass because of lower filling and closing costs and easier handling.

The Retailer prefers cans for reasons of easier handling, better display and no breakage.

The Consumer prefers cans for convenience, ease of storage and no risk of breakage. The latter point is very important to the housewife, particularly one with small children. In every market study we have undertaken, where we have sought consumer reaction to cans vs. glass, a preponderance of the replies have mentioned the danger of breakage of glass containers. Disposal of glass after use has also been emphasized as a problem.

[fol. 1050] 3) The lithographed can displays more advantageously than the labeled glass jar.

Samples of the Folger 2-oz. can have been ordered from Passaic #30 for all District Sales Offices for showing to customers. In comparing this lithographed can with any

labeled jar, one will see that the can has greater display space. The stacking feature on the can and the overall lithography enables the retailer to make a solid eye-catching display of our package.

4) The can costs less than the glass jar.

This statement is generally true although exceptions can be found for the reason that glass jars for soluble coffee are sold on a delivered price basis and we now sell f.o.b. the plant location at Passaic.

Nevertheless, in comparing basic costs of lithographed cans in cartons and jars plus cartons and labels, we find that the cans can be delivered at a price lower than the jars in a shipping area even greater than normal. This is because the basic price of the container at the plant is less, the cartons are smaller, and it is not necessary to use separators in the cartons.

As can lines are established in the future in the major soluble coffee packing areas, the above statement should prove to be 100% accurate.

5) The can protects the product

Any coffee expert will agree that light will cause flavor deterioration in packaged coffee. This is not as true with soluble coffee as with the ground product, but the consumer believes it to be the case. This fact was brought out in the National Family Opinion consumer survey which was undertaken late in 1954 where a substantial number of questionnaires developed the fact that consumers preferred the can because it protected the product from light.

6) Glass is expensive to ship

Generally, soluble coffee is packed at a central location and shipped into a fairly large market area. The weight of filled cans in cartons is about 40% less than that of filled glass in cartons.

For example, a carton of 24 2-oz. filled cans weighs about 7 pounds. The same number of filled glass units in cartons weighs from 11 to 12 pounds.

It is estimated that if all soluble coffee were in cans rather than in glass, the freight savings which would be enjoyed

by the entire Industry would be approximately three million dollars annually. This could represent added profits to the Industry if they switched to cans or could stimulate sales of soluble coffee through being passed on as savings to the consumer.

[fol. 1051] The following information supplements that in the "New Development" letter of July 21, 1955.

National Family Opinion Consumer Test

As stated above, in 1954 N.F.O. made a consumer reaction test of glass vs. tin containers for soluble coffee. This survey developed a great deal of detailed findings and comment and the report is summarized below to bring out some of the salient reactions.

It may be well just to briefly recount the way this job was carried out. Two containers, (one our test can, the other a regular glass jar) each having 2-oz. of identical soluble coffee, were sent out to 451 families. These families had previously been determined to be instant coffee users and in the 431 questionnaires returned (93.9% of those sent out) only 25 respondents said they did not use soluble at all. The dispersion of the test families was controlled by census data to get the proper balance as to 1) population by geographic regions, 2) city size, 3) age groups of homemakers and 4) income groups.

The panel was told to use each product for a few days and then return the completed questionnaire. Care was taken not to direct too much attention to the container, thereby enabling the panel to give an unbiased response whether related to the coffee or the container. The panel was not told that the two coffees were identical.

Overall Preference

It was expected that the glass packed product (controlling virtually all the present market) would take the edge here—which it did—44% of the respondents preferred it. However, 29% chose the tin-packed product. But, also significant was the fact that 25% stated they had no particular preference. This means that this sizeable group could be influenced to come into either camp. Therefore, it can be assumed that no prejudice would have to be overcome to

influence slightly over half—or 54%—of the respondents to buy their soluble coffee in tin.

Preferences on Specific Characteristics of the Test Packs

In addition to being asked their overall preference for use of the two products (not the packages themselves), the respondents were asked specifically what their preferences were on taste, freshness, attractiveness of container and convenience of package. Some reactions to the taste and freshness questions appeared definitely psychological in nature. Although it seems possible, after reviewing the pattern of the comments made, that taste and freshness of the product in tin could have been affected either by the metal container or the repacking operation, it is felt unlikely that the strong differences which showed up in consumer preference were based on true product differences. Here is the way the respondents answered on these four characteristics:

[fol. 1062]	% Pref. Glass	% Not Pref. Glass	% Pref. Tin	% Having No Spec. Pref.	% No Answers	Total
Taste	46	54	31	22	1	100%
Freshness	24	76	16	60	1	100%
Attractiveness of Container	46	54	23	30	1	100%
Convenience of Package	28	72	31	40	1	100%

Taste is one characteristic of soluble coffee that is probably most important (of the above 4) to the consumer. This is emphasized when we note that 77% had a specific preference on this point, but in spite of these firm opinions, more than half of all respondents failed to show preference for the familiar traditional glass container. Contrast with this the large percentage (60%) who had no preference on *freshness*. One big reason for this heavy "no preference" on freshness is that soluble has no aroma (probably the point on which freshness is judged particularly in the case of kitchen coffee) in the powdered state. In view of the very plain white can used in this test (not to mention the unpainted side seam, bottom seam and bottom) we did very well to get 23% to choose the can. A good job of color and design should put us right back in the race here.

This panel of housewives ran true to form on the *convenience* angle. Here, we were convinced, was a very strong

point in favor of our container and our conviction was right. The large group (40%) who had "no preference" on the convenience angle would be in our favor since Mrs. Consumer has had plenty of time to be convinced on the convenience factor of soluble coffee in glass jars in the years that glass has had a virtual monopoly in the soluble coffee market.

Considering the odds that were against tin in this test, we can say our batting average is very high—certainly good enough to show that the tin container for soluble coffee is probably destined to replace, to a great extent, the glass jar.

Samples from Passaic

The July 21st letter provided that only plain samples could be supplied from Passaic. It is now possible to secure lithographed samples which will be in the Folger design. It is preferred that these be shown to prospects rather than plain tin samples because of their excellent appearance.

Cans for Test

Recently, Metal R & D has been evaluating moisture pick-up in test cans which have been manually sealed as against cans which have been mechanically sealed. The results indicate that manually sealed cans do not reflect what will be realized under commercial packing conditions as the moisture pick-up averaged about 10 times that experienced with mechanically sealed cans.

This should be made known to any packers who are now making their own evaluation tests with our 2-oz. can. In the future, it is suggested that test cans from Passaic be supplied with seal and caps applied, with bottoms to be seamed on after filling at the packer's plant. Local Customer Research Representatives can secure seaming heads for the 204 diameter 2-oz. can from Metal R & D which can be used in making test packs.

[fol. 1053] Conversion of Jar Lines

The only automatic gluer now approved by Continental for use in the soluble coffee can line is the Filma-Seal Automatic Adhesive Applier manufactured by Ferdinand Gutt.

man & Company, 36th Street and 14th Avenue, Brooklyn, New York.

This applicator is equipped with a 1/20 H.P., 110-V, AC motor, and sells for about \$450.00 f.o.b. Brooklyn. Delivery can be made in about two to three weeks after order. If new adhesives are developed, other types of applicators may be recommended.

Adhesives

The adhesive which is now recommended for gluing the tamper-proof seal to the soluble coffee can is made by the Union Paste Company, 1605 Hyde Park Avenue, Hyde Park, Massachusetts. It is identified as Code #XA-143-77-613.

Other adhesives are now being evaluated by Metal R & D and additional types made by other manufacturers may be approved in the near future.

General

The interest in soluble coffee cans on the part of both larger and medium size packers is continuing to grow. The whole Industry is following the Folger market test and many soluble coffee packers have picked up filled Folger samples at retail. Two concerns, one a large grocery chain and the other a major packer of ground coffee, are now negotiating with contract packers with the thought that they may put their product in cans even before the completion of the Folger test.

A word on the potential market for our 2-oz. and 6-oz. cans. It is estimated that in 1954, over one billion ounces of soluble coffee were consumed. If all of this consumed product had been packaged in cans, the requirements would have utilized the output of eight soluble coffee can lines operating on a two-shift basis.

This great potential market provides Continental with an opportunity to grow in sales and profits. If we can succeed in getting two or three strong brands in our cans, competition will force the rest of the Industry to follow.

R. D. Cleaves.

RDC/wv

CC: Mr. D. B. Wiesley—#43,
Mr. S. B. Smart—#43.

Container Requirements for Coffee, Soluble

Prepared 6/15/55
Revised 5/1/56

Introduction

During the last 20 years there has been a large increase in the use of soluble coffee. Up to this time the product has been packed almost exclusively in glass. The Continental Can Company has felt that a considerable portion of this market could be obtained by metal containers, provided a suitable container meeting all technical and economic requirements could be developed. A metal container would have many advantages, the most important being lower initial cost, considerable savings in weight and, therefore, freight charges, and elimination of breakage.

(a) Market Potential and Competitive Situation

During 1955, 18,813,000 bags of coffee were roasted in this country, 2,323,000 of these bags, or 12.3% being used in making soluble coffee. This soluble coffee accounted for some 30% of the sales volume of all coffee in 1955. The total number of packages of soluble coffee used in 1955 consisted, approximately, of the following:

- 2 ounce glass jars—250,000,000
- 4, 5, and 6 ounce glass jars—150,000,000

There were also a comparatively small number of 2-ounce can units packed.

Continental's competitive position should be excellent. We now enjoy a substantial share of the ground coffee container business. Since many of our present customers are major producers of soluble coffee, we are in a good position to become the major supplier of the soluble coffee can.

(b) Containers Presently Used

As indicated above, this product is being packed almost entirely in glass jars. The jars are equipped with a glassine paper seal affixed to the top of the jar by means

of an adhesive. This paper seal acts as a primary moisture-vapor-barrier, and also provides a tamper-proof feature. A metal screwcap with waxed paper-board liner completes the closure.

(c) Previous Trial Containers

1. Lock-top with drumhead seal—Mennen side seam. This can was used commercially for several years for Nescafe. Both the Mennen side seam and closure allowed too much moisture pick-up.
2. Single Friction. Used to some extent commercially but reclosure inconvenient.
3. Trutite. Reclosure found unsatisfactory.

[fol. 1055] Product Description

(a) Composition

Soluble coffee is produced from roasted and ground coffee having a blend composition of 60-80% Santos and 20-40% Milds. A medium roast is used. A water extraction of a pulverized roast is prepared by a counter-current extraction system.

(b) Physical and Chemical Characteristics.

The product is extremely hygroscopic. It has a moisture content of about 2% when made, and as little as 0.5% additional moisture will cause it to cake. Chemically the product is quite stable. It does not have the delicate aromatic character of ground coffee, and is not subject to oxidation deterioration. The product is not corrosive to metal since it is neither extremely alkaline nor acid in nature, and is a dry powder with a very low moisture content.

Analysis of Competitive Containers

The only competitive container now used is a modified, single friction can made by American Can Company for American Home Foods Company. This can has a locking feature in the friction plug and has a fiber gasket in the chime of the plug.

In all other respects, it is a standard single friction can holding 2 ounces of soluble coffee and has dimensions of

208 X-206. We understand it is more expensive than the commonly used 2-ounce glass jar.

No information is available concerning the performance of this container. It is being used by only one packer, and apparently meets his particular requirements satisfactorily in spite of its cost.

Container Requirements (Tentative)

(a) Structure

A container for soluble coffee must provide a nearly perfect moisture-vapor barrier sufficient to prevent moisture pick-up greater than 0.5% during the shelf-life of the product. Although we have no definite information, we would expect the shelf-life of soluble coffee in glass to be at least one year. The container must have a reclosure feature such that when reclosed, a good moisture-vapor barrier is provided. It must be of convenient size to permit removal of small amounts of the product with a teaspoon. No vacuum or pressure resistance is necessary except for vacuum resistance in the vacuum filling procedure. In some cases, customers may be interested in vacuum or pressure packs for advertising purposes. A tamper-proof feature on unused cans will probably be required by most customers.

(b) Materials

Since the product is dry, there is no corrosion problem but the materials used must be flavor-free and have sufficient strength to withstand many openings and reclosings.

[fol. 1056] (c) Shelf-Life

The container should provide a satisfactory moisture-vapor barrier for a period of at least one year at room temperature before opening.

Interim-Container Specifications

(a) Structure

The proposed structure (STK-422) which Continental believes will meet all the requirements except for vacuum or pressure packing is as follows:

The can is essentially a slip cover can, except that the cover is threaded to engage threads on the upper portion of the body. A waxed, chip-board lining is incorporated in the cover to serve as a reclosure moisture-vapor barrier in a manner similar to that used in glass jars. A glassine disc is cemented to the top curl of the can body to serve as a primary moisture-vapor barrier, and as a tamper-proof feature. The side seam is soldered, and the bottom end compound lined and double seamed. Provision is made so that the customer will have the option of assembling the disc and cover onto the can after filling, or double seaming the bottom onto the pre-assembled can. Sizes are 204 X 315 (2-ounce) and 305 X 507 (6-ounce). Tooling exists for the 2-ounce size, and is being set up for the 6-ounce size.

(b) Materials

Plain #25 plate throughout will be used with provision for outside lithography on bodies and covers, where desired. Except for special fittings mentioned above, all other specifications will follow the Choice of Container Manual for the product and can sizes involved.

(c) Shelf-Life

It is estimated that this container will provide a shelf-life of approximately one year under ordinary conditions.

(d) Capacities

No. can capacities have been run as yet on either the 2-ounce or 6-ounce container.

(e) Filling and Closing

The customer will have the option of filling through either end. If he wishes to fill through the bottom and double seam the bottom end, he can receive cans which have the covers attached and glassine discs glued to the top curl of the can. If, on the other hand, he wishes to fill through the top end, he will then attach the covers and glassine seals after filling the cans as is presently done with jars. Most present packers of soluble coffee

will probably prefer the latter method, as they can convert their present equipment to can packing with a minimum of expense. However, a new packer might consider the former method to be easier.

This product is filled on a vacuum filler drawing approximately 15 inches of vacuum. As yet, we have had little experience with filling equipment but one machine which has been used to fill both 2-oz. and 6-oz. cans is [fol: 1057] the sixteen station Vacuflow Filler manufactured by the Pneumatic Scale Corporation, Ltd., Quincy, Massachusetts. This machine is capable of running at speeds up to 150 cans per minute.

If the covers are to be applied, the cans pass under a roller which applies a layer of adhesive to the top curl. The cans then are capped on a machine such as an 8 station CaPeM machine manufactured by the Consolidated Packaging Machine Corporation, Buffalo, New York.

Other Possible Container Types

(a) Cemented Side Seam Cans

A screw cap cemented side seam can would provide a wrap-around lithography and a less expensive can. However, so far, these cans have been inferior to soldered cans in moisture-vapor transfer. More work is needed on this can to perfect a good moisture seal.

(b) Inside Soldered Cans

An inside soldered can would provide a wrap-around lithography similar to that of a cemented side seam can, and would provide a better moisture-vapor barrier. However, this can would cost more to manufacture than a cemented side seam can, and might also present some manufacturing problems.

(c) Screw Cap Can With Drawn Body

Such a can would eliminate problems of moisture transmission through the side seam and simplify the sealing of the glassine disc at the top curl. However, manufacturing and lithographing this type of can would present many problems.

(d) Conoseal Type Closure

A soluble coffee can with a Conoseal closure would eliminate the need for sealing a glassine disc to the top of the can as well as eliminating the screw cap. It is questionable whether this structure could provide a satisfactory moisture seal upon reclosure. Up to this time, development of this can has not proceeded far enough to consider any particular proposed structure for soluble coffee.

(e) Trutite Can

This type of can has been considered by a large food chain as a possible 5 or 6 ounce size soluble coffee package. This type structure would permit vacuum packing for advertising purposes, as well as provide an excellent moisture-vapor barrier before opening. However, the moisture-vapor barrier provided upon reclosure might not be satisfactory. Also, manufacture of a 2-ounce package would create difficulties.

[fol. 1058] (f) Lug-Type White Cap Closure

A container now under development, consisting of a can with a lug-type White Cap closure, would appear to be an excellent possibility for use as a soluble coffee can. Such a can should provide an excellent moisture-vapor barrier, with vacuum packing for advertising purposes being possible. It should also provide convenient reclosure and a good moisture-vapor barrier upon reclosure. However, as this can is still in the early stages of development, it is unlikely to be available on a commercial scale for some time.

Work In Progress

(a) Adhesives

Tests are now being run evaluating new adhesives for use in sealing the glassine discs to the cans. An adhesive manufactured by Minnesota Mining and Manufacturing Company, code EC-871, seems to be the most promising.

(b) Structures

Modifications of the existing top structure of the proposed structure (STK-422) are under way in order to provide a more nearly level surface at the top curl. The modified 2-oz. cans should be available for evaluation within the near future.

(c) Colored Side Stripes

It has been requested that some samples of Folger 2-oz. cans be made up with a colored side stripe in order to show their appearance. It is hoped that these cans will approach the wrap-around lithography in appearance.

H. P. Lankelma, Jr., Special Products Section.

HPL/bw

[fol. 1059]

GOVERNMENT'S EXHIBIT 412

Instant Coffee Container Study
Conducted for Continental Can Company

Conducted By
National Family Opinion, Inc.
1621 Canton Street
Toledo, Ohio

February 15, 1955
National Family Opinion, Inc.

[Vol. 1060]

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[fol. 1061]

Foreword

The results of a blind Product Test of two different kinds of Instant Coffee Containers are herewith presented. This study was conducted for the Continental Can Company, New York City, New York, by National Family Opinion, Inc., of Toledo, Ohio, during the months of January and February, 1955.

Purpose

It was the purpose of this study to gather information on consumer acceptance of a metal versus a glass container for instant coffee products.

Procedure

On December 29, 1954, test products, questionnaires and letters of instructions were mailed to a selected national panel of 459 instant coffee using families.

All participants in the study had previously agreed to cooperate voluntarily and without remuneration in the activities of National Family Opinion, Inc. The panel was built to represent instant coffee using families by United States Census geographic division, population density, family income and age of homemaker controls.

The test products differed only in the material used for packing and were identified only by the code letters "L" and "V" (for "tin can" and "glass" respectively) the testing period was set at a few days for each product.

On February 2, 1955, the survey was closed for editing, coding and tabulating. As of that date, a total of 431 questionnaires, or 93.9% of the original mailing, had been returned.

[fol. 1062] A detailed copy of the sample distribution can be found in the Historical Section of this report, while a copy of the questionnaire and coding list used has been included in the Appendix of this Final Report.

Note: Percentages shown in the findings section of this report have been rounded off to the nearest full percent (.5-.9 to the nearest higher, .1-.4 to the nearest lower full percent). No attempt has been made at adjustments where, due to this procedure, individual percentage columns do not add to 100%.

2612

[fol. 1063]

GOVERNMENT'S EXHIBIT 413

Folger Soluble Coffee Can Investigation in Kansas City
November—1955

In Store Interviewing Conducted by W. R. Simmons &
Associates

New York, N. Y.
Commercial Research Dept.
December—1955

[fol. 1064]

Method of Conducting Test

On November 17, 18 and 19 a series of personal interviews on instant coffee was conducted in three Kansas City super markets (Prairie Village Pay Less, Thriftway Super Market and Cascio) selected by the Folger Company. All of these stores stocked the 2 oz. Folger tin of instant (which had been on the shelf but not consistently for about two months) as well as Folger's instant in glass.

A total of 372 interviews were conducted. Prime emphasis was placed on interviewing all persons who bought soluble coffee by having the interviewer approach persons immediately after they had made a purchase. When interviewers were not occupied with persons just having purchased soluble, they confronted people shopping in the vicinity of the soluble counter to determine whether or not they were users of soluble in spite of the fact they were not buying it that day. Interviews were conducted with only those in this non-buyer group who were regular users of instant coffee. Of the 372 total interviews, 208 purchased on the day of the interview while 164 did not.

The test was conducted by W. R. Simmons and Associates of New York City—using one of their most capable field supervisors on the scene in Kansas City. Objective methods were used and it is believed the conclusions are sound within the limits of the test design.

[fol. 1065] GOVERNMENT'S EXHIBIT 415B

Promotion of Baby Food in Cans
Structural Changes in Cans and Advertising Programs

[fol. 1066] Baby Food Advertising Program
—Past & Present

The history of our advertising department's program to promote baby food in cans started back in 1940. During that year, a series of advertisements were placed in such media as Parents Magazine, New York Sunday Tribune, New Yorker Magazine, and Baby Talk. These media were chosen and suggested to us by Gerber's Advertising Agency. Our budget on this series was \$8,348.00.

In 1945, a baby food survey was conducted by our Market Analyses Department. This survey indicated a preference for glass packed baby food where both tin and glass packages were available. As a result of this survey, it was decided to have BBD&O conduct a Baby Food Depth Survey, which would result in specific reasons for the preference of glass packed baby food. The Depth Survey was conducted in New York and Los Angeles. The Depth Survey gave us the following results.

1. Question: Whether or not mothers are prejudiced against the use of canned baby food because of fear that left-over food stored in a can will spoil.

Results: The results point out that this is one of the major obstacles to the acceptance of canned baby food.

2. Question: Whether or not a plastic cap, to be used to cover the unused portion of food stored in the can for future use, would remove the fear of food spoilage.

Results: The study points out that a plastic cap for the opened can, would not remove the fear of food spoilage in an open can.

3. Question: What other factors are involved which operate against mothers using canned baby food in preference to jarred food?

Results: The Survey points out these additional objections to the can:

- A. Can hard to open;
- B. Cannot feed directly from cans;
- C. Can not sanitary;

- D. Cannot heat food in cans;
- E. Product not visible in cans.

4. Question: Is there any solution to the problem, which would persuade mothers to use canned rather than jarred baby food?

Results: A. Eliminate structural disadvantages of the can;

B. Conduct an advertising campaign stressing the cans advantage over glass;

C. Conduct advertising campaign to convince mothers their objections to canned food are unfounded.

Using the market survey and the Baby Food Depth Survey as a basis, a concentrated campaign to promote baby food in cans was started in Philadelphia early in April of 1946.

The campaign was conducted in cooperation with Gerber, Clapps, CMI, and Continental Can Company. This campaign consisted of the following efforts:

- [fol. 1067]
1. Testimonial advertisements in two local Philadelphia newspapers once each week.
 2. Plastic covers for opened cans and folders on "How to Feed Your Baby" were sent to mothers that had children between five months and one year of age.
 3. Baby food in cans was promoted by the CMI on a morning radio show.
 4. Continental Can Company promoted baby food in cans using cut-in announcements on their, then existant, network radio program.
 5. Direct mailing pieces were sent to Doctors and Food Editors to publicize the campaign.
 6. The Clapp and Gerber salesmen carried out a point of sale promotional campaign.

This campaign was carried on for six months. At the end of the six months, glass packed baby food was still gaining in sales. The campaign did not increase the sales of canned baby food, therefore, it was dropped.

The present advertising campaign was started in 1949. This program is designed to combat any prejudices that the

Doctors might have against baby food in cans. It is aimed at convincing the Doctors of the following five points in favor of the canned baby food:

1. **Economical:** Baby food in cans is usually priced as low or lower than baby food packed in other containers.
2. **Sterile:** Processing sterilizes the inside, and light, dust, and germs cannot get into a hermetically sealed can.
3. **Extra Safety:** Cans are sealed to stay sealed until they are opened.
4. **Shatterproof:** Steel and tin will not break or chip.
5. **Safe for Left-overs:** Food can be safely left in the can; just keep it covered and under refrigeration.

These ads also contain a statement from the Council on Foods and Nutrition of the American Medical Association: "The wholesomeness and nutritional value of canned baby foods has been repeatedly demonstrated. Furthermore, cans offer a high degree of protection against contamination."

Our present campaign consists of advertisements in the following monthly periodicals:

1. Journal of American Medical Association
2. American Journal of Nursing
3. Journal of Pediatrics

Copies of the type advertisement that is used for this campaign are attached.



No matter how
you look at it—

**BABY FOOD
BELONGS
IN CANS**

**5 REASONS WHY CANS ARE
AN IDEAL CONTAINER
FOR BABY FOODS**

1. **ECONOMICAL.** Baby food in cans is usually priced as low or lower than baby food packed in other containers.

2. **STERILE.** Processing sterilizes the inside, and light, dust and germs can't get into a hermetically sealed can.

3. **EXTRA SAFETY.** Cans are

The only fully suitable container for baby foods is one that is shatterproof, light- and dust-proof, and constructed with a positive seal. All these requirements are met by the eco-



you look at it-

BABY FOOD BELONGS IN CANS

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3. **EXTRA SAFETY.** Cans are sealed to stay sealed until the consumer opens them.
4. **SHATTERPROOF.** Steel and tin won't break, shatter or chip.
5. **SAFE FOR LEFT-OVERS.** Food can be safely left in the can, just keep it covered and under refrigeration.

The only fully suitable container for baby foods is one that is shatterproof, light- and dust-proof, and constructed with a positive seal. All these requirements are met by the economical tin can. Processing sterilizes the inside of a can as thoroughly as the instruments you use. And baby foods can be safely left in opened cans - just keep the food covered and under refrigeration.

Says the Council on Foods and Nutrition of the AMA: "The wholesomeness and nutritional value of canned baby foods has been repeatedly demonstrated. Furthermore, cans offer a high degree of protection against contamination." Continental Can Company, New York 17, N. Y.

Vitamins—

PRESENT AND A

Continental research has helped
vitamins in canned vegetables, fru,

This may surprise you. However, it's a ¹⁰
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by the housewife.

That's because fruits and vegetables use
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To make sure that more and more vi
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Today when you serve a canned food,
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If it's a packaging

*If you are a food packer, you will find that th
are major reasons why so many people like to d
Our one goal is to packing problems of all*



Vitamins—

PRESENT AND ACCOUNTED FOR

Continental research has helped canners preserve vitamins in canned vegetables, fruits and fruit juices



This may surprise you. However, it's a fact that canned foods are just as high in vitamin content as the same foods bought in the market and cooked at home by the housewife.

That's because fruits and vegetables used for canning are picked at their prime and "pressure-cooked" in sealed cans—often within the hour. There's little time for vitamins to escape as they do during the days it usually takes to deliver raw foods to the market.

To make sure that more and more vitamins reach your table, Continental's research scientists have pioneered in studies of the vitamin content and nutritive value of canned foods. They have suggested many specific improvements in canning equipment and procedures to the canning industry. And each year they visit canning plants all over the country to help individual food packers do a better job.

Today when you serve a canned food, you can be sure that the food contains most of the nutritive qualities and vitamins that nature put into it. Continental research has helped bring more food and better food to more people!



If it's a packaging problem—it's our baby!

If you are a food packer, you will find that the quality and scope of our research service are major reasons why so many people like to do business with Continental Can Company. Our one goal is to solve packaging problems of all kinds.





...in the same vegetables, etc.

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YOU ARE NEVER FAR FROM CONTINENTAL

Continental Can has 65 plants in the United States, Canada and Cuba, 16 field research laboratories and 63 sales offices.



CONTINENTAL CAN



TIN CANS



FIBRE DRUMS



PAPER CONTAINERS



STEEL PAILS AND DRUMS

CANS



VITAMINS IN CANNED VEGETABLES, FRUITS AND FRUIT JUICES



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CONTINENTAL CAN COMPANY
NEW YORK, NEW YORK



TIN CANS



FIBRE DRUMS



PAPER CONTAINERS



STEEL PAILS AND DRUMS



CAPS AND CORES



PLASTIC PRODUCTS



CROCKWARE

[fol. 1070] Baby Food Advertising—Plans

On June 4 Del Johnson had lunch with Mr. Ken Plumb, Vice President of the D'Arcy Advertising Agency, which organization handles the Gerber account. This meeting was for the purpose of getting Mr. Plumb's suggestions for any changes in our advertising copy, as well as to discuss direct mail as an alternative for space advertising, since we were faced with a good deal of waste circulation in areas where baby food in cans are not available.

Mr. Plumb said that they were completely satisfied with our advertising copy and would suggest no changes. He did admit that the problem of waste circulation was realistic, but in a communication after his visit to Fremont, pointed out that direct mail to a selected list of doctors probably would be just as expensive as our present campaign. Therefore, he suggested no changes in copy or media selection.

In this meeting, and in subsequent correspondence, he indicated that the Gerber people would look with favor upon our doing a mailing to young mothers on the subject of baby food in cans. This list of young mothers, which Gerber's compiles, would be made available to us at \$10 per thousand names, the names being supplied on gummed label's. Gerber's estimate that the number of names in areas in which they now sell in cans is about one million, so that the total mailing list costs about \$10,000 over a year's time.

At the present writing, Mr. Johnson feels that we should continue our space program in the Journal of the American Medical Association, the Journal of Pediatrics and the American Journal of Nursing through the balance of the year, but in the meantime launch a direct mail campaign to young mothers, using the Gerber list. If we take this approach, we will have a chance to study the results of our direct mail effort, and then decide whether to use both space and direct mail together, or confine our efforts to one or the other.

During the week of July 13, Mr. Johnson will review these plans separately with Mr. Dave Danforth of BBD&O, and then again with Mr. Ken Plumb.

Structural Changes In The Baby Food Can

The need for more basic structural improvements in our baby food can was evident from a Baby Food Depth Survey made by BBD&O during 1945.

This study showed that the greatest need for structural improvement was in the ease of opening and to provide for reclosure. Our efforts to accomplish these improvements have been directed toward manufacture of a key opening Trutite style reclosure can. The problems encountered with this style structure and some of the Trutite style's inherent disadvantages for processed foods have to date prevented a successful fulfillment of this development. As a result, we have recently decided to go all out on attempting to develop a reclosure style baby food can based on the "Conoseal" type structure.

If the "Conoseal" type structure proves feasible and economical, it will overcome the two major objections to the present baby food can.

Another improvement contemplated for the present baby food can is to provide it with a more sanitary appearing interior by the use of a white enamel. The Research Department is currently making test packs with baby food cans for meat with recently developed white inside enamels. The initial evaluations of these test pack cans indicate a good possibility of success for a commercial white inside enamel for baby food meat cans.

Experimental inside white enameled baby food cans are being fabricated for test packing fruits and vegetables. These cans will be ready for shipment early in July.

If white enamels can be successfully used for the inside of baby food cans for meats, fruits and vegetables, they will greatly enhance the internal appearance of the cans and help overcome some of the present sales disadvantages of the can compared to the glass jar.

A minor objection to the can was that the consumer could not see the contents of the package. This probably could be overcome by improved labeling and the use of lithographed cans.

Some work on lithographed versus labeled cans is now

being done and should provide the answer to the effectiveness of this approach from a cost as well as consumer acceptance angle.

The other inherent disadvantages to canned baby foods are basic fallacies on canned foods such as food spoiling in opened cans, tin tastes imparted to foods, "Cannot heat food in cans", which can be overcome only by direct consumer education advertising.

The Advertising Department has prepared a summary of past, present and future programs for baby food can promotions which is attached.

L. C. Dudley

[fol. 1072] GOVERNMENT'S EXHIBIT 415C

#43—Head Office
February 10, 1947.

Messrs. P. E. Pearson,
T. C. Fogarty,—
P. L. Brachle.

**New Style Baby Food Can With Drawn One Piece Body
and Pry Off Compound Lined—Snap on Reclosure Cover**

We have received a sample of the above style container from Mr. Pearson and have made the following notes comparing the new container with the $4\frac{3}{4}$ ounce glass jar currently used for baby food as they might be evaluated by the packer or baby food buyer.

From Packers Point of View

(1) Does container and closure provide a safe and suitable package for the product, which is baby food?

(2) Is it a package which will have universal buyer acceptance and does it have competitive advantages over the glass jar and can now used?

(3) What is Cost—Compared to standard open top can now used?—Compared to standard glass jar— $4\frac{3}{4}$ ounce size and $7\frac{1}{2}$ ounce size?

(4) Is equipment available to perform handling, filling,

capping, processing and cooling, labeling and casing operations? Is changeover equipment cost excessive?

(5) What problems and expenses will be incurred in introducing and merchandising a new style container?

From Consumers Point of View

On the attached page we have tabulated a list of indicated consumer preferences for baby food containers and have endeavored to interpret these as they might apply to the 4¾ ounce jar and the new style can.

Retail Prices of Product

An important point in favor of the present open top can for baby foods from the consumer point of view is its cheaper retail price. While there are also certain convenience factors in its favor, the price differential seems to be the main incentive. If this differential were eliminated, the selling would be on a container basis with a well known style of glass jar vs. a new and untried style of metal container.

[fol. 1073] Shelf Appeal to Consumer

The glass jar with its visible contents retains the see-what-you-buy advantage over the new style metal can. The jar's taller height may also give the impression of greater net content. This eye appeal comparison could be made more readily when sample cans are available complete with labels and perhaps with outside gold enameled covers similar to the jar caps.

Container Sizes

If at any time it should be decided to make a consumer preference or opinion test it might be advisable to consider using both the can sizes which would normally compete with the 4¾ ounce and 7½ ounce jar.

G. H. Muth.

GHM:em

[fol. 1074]

Baby Food Containers

Tabulation of Possible Favorable and Unfavorable Consumer Preferences—4½ oz. Glass Jar vs. 210 x 114—Drawn Body, Reclosure Cover Can Enameled White Inside.

Specific Consumer Preferences, Prejudices and Opinions

Style, Shape and Closure

Consumers frequently associate products with specific styles, shapes and closures. At first glance the buyer might question the safety of the slip cover style of closure, as it has been largely used in the past for non-processed items and the buyer is accustomed to an open top style can for processed foods.

Store Leftovers in Containers Most Sanitary Food Package
There is a strong prejudice against leaving baby food leftovers in metal cans and it should be ascertained if this condition would be overcome by use of the new style container. A recent survey made by Benton and Bowles indicated that 80% of the buyers interviewed felt that a glass jar after being opened is the most sanitary container for leftovers. About 50% felt it was unsafe to leave unused portions of food in cans. This is one of the principal objections to the metal can as a baby food container. The white inside enamel may be helpful in correcting this thinking. Does it have other advantages than "looks more sanitary."

4½ Oz. Glass Jar

This attitude favors the glass jar closure. Mothers hesitate to take risks where baby food is involved.

Current thinking favors glass jar.

Reclosure Cover Can

From a "safe" seal point of view we believe the consumer would prefer the present open top can.

Consumer reaction to white inside can enamel must be determined.

[fol. 1075]

Specific Consumer Preferences, Prejudices and Opinions

Visibility of Contents

Easy to Open—No Can Opener Needed

The new can closure is an improvement over the present open top can. However, it is not as easily pried off as the cap on the glass jar. However, this difference could probably be corrected. This form of construction raises the point as to the possibility of a curious buyer opening the can to see its contents which are visible in the glass jar.

Reclosure Feature
Heat in Container

4½ Oz. Glass Jar

The glass jar will continue to have the advantage of indicating the quantity of left overs in the container.

Assume both to be equal

Assume both to be equal

Reclosure Cover Can

Assume both to be equal

Assume both to be equal
Food in the can should heat more quickly than in the glass jar; being metal and having a larger exposed area.

[fol. 1076]

Specific Consumer Preferences, Prejudices and Opinions

Feed From Container or Easy to Feed From

The current containers due to their small diameter and height fit the hand, spill very little and are easy to feed from. The shorter height and larger diameter of the new can should be checked for these features.

Easy to Dispose of—Easy to Use When Travelling

No breakage or glass particles

No tin plate slivers due to opening as with present open top can.

Contents not affected by sunlight

No Rusting of Inside Container

No Taste or Odor due to Enamel Coatings

Product Background

Glass forms a neutral or accepted background for many various-colored food products. The white enamel background in the can should be checked against the various products packed and also as a background for leftovers.

Comparative Retail Prices

4 1/2 Oz. Glass Jar

Claimed as favorable to jars

Claimed as favorable to jars

Reclosure Cover Can

Favorable to new style can

Favorable to new style can

Favorable to new style can

Favorable to new style can

On an equal retail price basis we believe consumers would buy glass jars since they are accustomed to paying a premium for glass packs.

[fol. 1077]

GOVERNMENT'S EXHIBIT 416

**Report of Consumer Survey Made in Philadelphia
on Baby Food For Continental Can Company, Inc.
Batten, Barton, Durstine & Osborn, Inc.**

**Boston Buffalo Chicago Cleveland
Detroit Hollywood Los Angeles
New York Minneapolis Pittsburgh
San Francisco**

[fol. 1078] Report of Consumer Survey

Made in Philadelphia on Baby Food for
Continental Can Company, Inc.

Foreword

The findings in this report are based upon the results of making personal interviews on a total of 2003 young mothers whose babies range in age from three to fourteen months. The field work was conducted during the latter part of March 1946.

Kinds of Persons Interviewed:

The interviews were confined to women who are mothers of babies of an age to be fed prepared baby food—three to fourteen months of age.

Reporters judged the income of the families called upon and, as will be noted in Table #11, the spread by income groups comprises a sound cross-section.

By age groups, 41 per cent of the mothers are under 25 years of age, 58 per cent between 25 and 40 years and 1 per cent are over 40 years of age.

[fol. 1079] Method of Interviewing:

The calls were made in the home by trained female reporters in the employ of Fact Finders Associates, whom we engaged to conduct the field work. Experienced supervisors check the work of the field force. Fact Finders Associates have been employed by us on many surveys over a period of years and we have complete confidence in the reliability of their field staff.

In order to locate mothers with babies, the reporters had a list of such families. Addresses were selected at random from this list in various sections of the city and suburbs, called upon and on completion of the interview, respondent was usually able to guide the reporter to another young mother's home in the neighborhood.

A copy of the questionnaire used will be found following the tables and charts.

Scope of the Survey:

Interviews were made in Philadelphia and environs. They were widely spread over the city and in outlying sections such as; Camden, Germantown, North and West Philadelphia, etc. A list of the areas covered is shown in Table #8.

[fol. 1080] Objectives of the Study:

This study was planned to obtain information on the relative use of brands and the attitude of women toward the use of tin cans versus glass as containers for baby food. The principal purpose of making the survey at this time was to obtain the information prior to starting an advertising and promotion campaign in this territory. The results of this study will be used as a base for comparison with a comparable survey that will be made at the close of the campaign in order to measure the penetration and effectiveness of the advertising activities; (1) on brand sales and (2) on mothers' preference for types of containers and the degree to which they have been influenced to switch to tin cans.

The follow-up survey at the close of the campaign will be a matched sample—interviewing as many of the same mothers as can be contacted and the same series of questions will be asked with possibly some additional questions on knowledge of baby food advertising that has run during the interim.

[fol. 1081] Summary:

The results of the survey are shown in complete detail on the tables and charts following and this summary will touch only on the high-spots.

Every woman has bought one or more products in both tin cans and glass containers and they are, therefore, qualified to give an honest opinion for preference for type of containers and the reasons for their choice.

Eight out of every ten of the mothers interviewed have bought baby food in tin cans but if they had their choice of containers at no extra cost, less than one out of ten would take the tin can. With some variations this same relative

situation exists with all the other kinds of products discussed in the study.

On brands of baby food used at present, Heinz and Beechnut are used by 53 and 51 per cent respectively, Gerber is in third place, mentioned by 38 per cent and following, in the order named, are Clapp 22 per cent, Libby 16 per cent, Campbell 15 per cent and "Other Miscellaneous Brands" 5 per cent.

[fol. 1082] When brands used are analyzed according to economic status of the family, some significant variations are indicated. For example, Heinz, Beechnut and Libby are purchased by larger proportions of the upper economic groups than of the lower. The reverse is true of Gerber's, Clapp's and Campbell. These three brands are used by heavier proportions of the lower economic groups than by mothers in the top brackets.

Multiple buying of brands is very heavy, 72 per cent of the total mothers use more than one brand. The average number of brands used is two per family.

Of the 28 per cent of the total mothers using one brand exclusively, 9 per cent buy Heinz, 8 per cent Beechnut, 7 per cent Gerber, 2 per cent Libby and 1 per cent each use Clapp and Campbell.

In connection with multiple brand buying, which is shown in detail in Table #5b, Heinz and Beechnut are in the best position.

For example, of the total users of Beechnut, 30 per cent also use Gerber while of those using Gerber, 40 per cent also buy Beechnut.

A more extreme case is with Heinz users, only 19 per cent of whom also buy Clapp while of the Clapp users, 46 per cent also use Heinz.

[fol. 1083] This analysis also shows that 58 per cent of the Clapp users also buy Gerber while only 33 per cent of the Gerber users also buy Clapp.

Of the mothers now using Clapp's and Gerber's baby food, (which they get in tin cans) only 18 and 15 per cent respectively prefer tin containers. Six mothers out of ten using these brands prefer glass and two out of ten have no preference.

Of the women buying glass packed baby foods, less than

5 per cent prefer tin and only some ten per cent have no choice. Over 85 per cent prefer glass.

It is apparent that the habit of buying in tins has some effect in influencing women in favor of tin cans but it is very slight.

By economic groups there is a gradual increase in the proportion of women preferring tin for baby foods of from 6 per cent in the "A" or top bracket to 12 per cent in the "E" or lowest economic group.

Nearly all of the tables and charts are broken down according to economic status and age groups and, it will be noted, that with some few exceptions there are no significant variations.

Respectfully submitted, Batten, Barton, Durstine & Osborn, Inc.

May 3, 1946.

RNK

[fol. 1084] GOVERNMENT'S EXHIBIT 417.

Reclosure Baby Food Can

Relationship Between Market Acceptability Information and Contemplated Can Developments

I. Feeding from Container and Storage of Food

The outstanding and major reasons for consumers preferring glass jars instead of metal cans for baby food is the deep seated belief that jars are completely sanitary containers which can be used in place of dishes for feeding and are also ideal for storing unused portions of food in a refrigerator while conventional cans are not suitable for either direct feeding use or storage of partial contents. The fear of storing unused portions of food in cans is related to the conviction that "tin" is poisonous and that there is a distinct health hazard in eating food that has been stored in an opened can.

A. White Enamel Lining of Cans

The proposition of providing a can having a white enamel lining to create the reaction that a metal can is clean, sani-

tary, and safe vessel for foods is certainly logical. The value of using such a lining would be greatly enhanced through the use of an identifying name for the lining such as "Porcelainite", "Sani-White", etc. which could be used in advertising in conjunction with a general campaign to educate the public to the fact that food may be as safely stored in cans as in jars.

B. Opening Size of Container

One of the few objections to the glass jars was that the opening was too small making it difficult to remove the contents. Actually it is felt that the inside "shelf" of the jar which is the result of necking in the top of the jar is responsible for this reaction rather than the dimensions of the opening. In either event this is an objection which would not exist with the Trutite, Conoseal or Screw Cap cans.

C. Feeding Directly from Cans

Due to the great convenience when baby food is heated in the container and is fed without transferring to a dish or bowl, this important attribute of the glass jar cannot be [fol. 1085] overlooked in designing a suitable can. Here again, the Trutite, Conoseal or Screw Cap can styles all involve almost straight body walls making them suitable as feeding containers although the Trutite structure does not completely fulfill the requirement of a smooth inside surface. It would seem that a major point of concern might be the resistance of the enamel lining to scratching, particularly along the side seam, when a spoon is scraped across the surface during feeding. Here again, the double body fold of the Trutite can would not provide as good assurance against removal of enamel lining as would a can having an uninterrupted body wall.

D. Lithograph vs. Paper Label

Associated with either direct feeding from the container or when the contents are transferred to a dish, most consumers have found it convenient to plate jars in hot water for heating purposes. Paper labeled jars have been criticized because the labels have come off in the heating water and have been a nuisance to remove from the water and in

addition the residual label glue remaining on the jar surface has caused difficulty in handling by causing hands to become soiled and also by resulting in dropped jars. Certainly, a lithographed can would overcome these particular objections to jar labels.

E. Raw Edges

Obviously, any raw edges that might lead to corrosion problems inside the container or which might cause the person opening a can to receive finger cuts, are to be avoided. The presence of cut edges that are formed during opening, in standard open top cans, are further objectionable in baby food cans in that the containers may not be placed in the hands of the babies due to the hazard of cuts. The hinged Trutite structure does not fulfill this requirement but both the Conoseal with the hemmed edge cover and the [fol. 1086] Screw cap type cans do meet the desired condition. (The question of how much of a cutting hazard is present during opening of a Conoseal can has not been established.)

II. Ease of Opening and Security of Reclosure

A major feature of the preference of white cap jars over conventional cans is the relative ease of removing the lid from jars with almost any of the implements found in the kitchen as compared to the problems in using either a wall type of portable can opener with the attendant problems of removing dirt and dust from the can end, having the end drop into the product, cutting fingers while trying to pull end up, etc. As to the reclosure, one objection to the jar cap is that it is frequently deformed during removal and therefore fails to provide a secure reclosure. (The implication is that a satisfactory reclosure must give the impression of being *tight* and a mere dust cap is not adequate.)

Relating the above requirements to various can closures under consideration, it will be realized that:

- 1—The Trutite does not actually meet the requirements of being "easy opening" and further does not fully give assurance of a tight reclosure.
- 2—The Conoseal largely fulfills the easy opening requirements and when a close fit between the end

cover is provided would seem to fulfill the tight reclosure attribute.

- 3—A screw cap reclosure that did not require a strong opening torque would meet the first requirement and the reclosure would automatically be adequate.
- 4—Many of the possibilities of friction covers on crowns would not provide a suitable reclosure either because of damage during opening or the difficulty [fol. 1087] in forcing the crown back by hand. The side seal cap type of reclosure as used on jars would of course have to be considered largely satisfactory from the standpoint of opening and reclosing.

The importance of heating the product in containers is

partly emphasized by the fact that in 1945, 25% of the jar users interviewed stated that heating was done by placing unopened glass jars in hot water while only 6% of the can users heated in unopened cans. If this is a really important factor in providing a can to compete with jars on as many scores as possible, it would seem that an opening feature requiring the least amount of handling would be imperative. Of those types of closures already mentioned it is suggested that they would be preferred in the following order from best to poorest:

- 1) Pry off lid
- 2) Conoseal
- 3) Screw cap
- 4) Open top

In the foregoing attempts to relate certain of the features which are known to be requirements for an improved baby food can with some of the structures under consideration for development it should be made clear that these are only the opinion of the writer. In some cases, opinions may differ and in others a determination of actual consumer acceptance would be necessary to establish the true value of some of the factors. However, it seems apparent that if we knew today that all of the structures were equally satisfactory with respect to leakage the order of preference from a consumer acceptability and cost standpoint would be as follows:

First Choice— *Screw Cap Type*

Relatively easy opening, no cutting hazard, good reclosure, no raw edges, full opening, smooth body wall. Esti-
[fol. 1088] mated cost \$1.00 more than open top.

Second Choice— *Pry Off Lid Type*

Relatively easy opening, no cutting hazard, good reclosure, no raw edges, full opening, beaded body wall. Estimated cost \$1.00 more than open top.

Third Choice— *Conoseal Type*

• Relatively easy opening, possible cutting hazard, fair reclosure, no remaining raw edges, full opening, smooth body wall. Estimated cost \$2.15 more than open top.

Fourth Choice— *Trutite Type*

Difficult opening, fair reclosure, some cutting hazard, raw edges after opening, full opening, folded body wall. Estimated cost \$2.75 more than open top.

RAL/lb
7/15/53

[fol. 1089] GOVERNMENT'S EXHIBIT 419A

#43—Head Office
July 5, 1945

Messrs. T. C. Fogarty
R. L. Perin
F. E. Falk

Baby Food Survey

The Market Analysis Department conducted a test survey in May to determine consumer preference as regards baby food in tin versus glass. A total of 1,392 mothers of babies were surveyed, 1,341 of whom buy baby food.

The survey was divided into two parts: (1) New York City and (2) sixteen representative cities located in all parts of the country. 783 mothers were surveyed in New York and 609 in the sixteen cities. The charts following show the survey results in graphic form.

New York City

Consumer preference is strongly in favor of glass in New York City with 97% of the mothers preferring glass at the same price as tin, and with 89% still preferring glass even if they could get their regular brand at a lower price in tin. Very little baby food in tin is apparently offered in retail stores in New York currently; 97% of the mothers say their regular brand comes in glass and 3% say their brand comes in tin.

The chief reasons given by New York mothers for preferring baby food in glass are: more convenient; can keep leftovers in glass jar; can see contents of glass jar; and more sanitary. "More convenient" includes several specific reasons: easier to open; can heat in jar; have to transfer to jar anyway; and feed from jar. Beechnut is the outstanding brand, bought by 45% of those surveyed.

Sixteen Cities

In contrast with New York, the mothers surveyed in the sixteen cities have not had as much experience with glass. In fact, 66% of these mothers say their regular brand comes in tin, and 34% say it comes in glass. In the Central Division 80% of mothers surveyed say their regular brand comes in tin.

However, it seems likely that there will be a trend to glass when baby food is more available in glass than at present, judging from the following figures:

74% of the mothers would choose glass if they could buy their regular brand in either glass or tin at the same price. This contrasts with only 34% now buying their baby food in glass.

[fol. 1090] Furthermore, 52% would still choose glass

even if they could buy their regular brand in tin at a lower price.

Price may be a more important factor than in New York City because 74% would choose glass at the same price as tin, but only 52% would buy in glass if they could get their regular brand at a lower price in tin.

The same reasons for preferring glass are cited by these mothers as by New York mothers. However, it may be interesting to note that "more convenient" and "glass breaks" are the chief reasons given by the 26% minority who would choose tin if their regular brand came in either tin or glass, at the same price. Gerber is the leading baby food brand, used by 33% of the mothers surveyed in the 16 cities.

Please bear in mind that this survey is not broad enough to be taken as final or conclusive. Nevertheless, it is believed to be valid in suggesting the main points of the large picture as regards current consumer attitude toward tin vs. glass.

We hope that the nine charts will show you the survey's findings in a clearer way than would a mass of figures. If any questions occur to you on any of the points covered, please don't hesitate to let me know and I will reply by return mail.

Sincerely, S. T. Frame, Manager of Market Analysis.

STF/md

cc—Messrs. W. H. Funderburg,
R. R. Carlier,
J. E. Baldwin,
C. B. Nichols,
W. W. Hodgson.

[fol. 1091] GOVERNMENT'S EXHIBIT 419B

Baby Food Survey

The baby food survey was conducted in two parts: New York City and 16 representative cities. 1392 mothers of babies at the baby food eating age were included, of whom 1341 buy baby food.

New York City

783 mothers were surveyed in New York City, 751 of whom buy baby food.

560 mothers were surveyed by mail questionnaire, and 223 were surveyed by personal interview.

Survey includes principal racial and income groups. The attitude toward baby food was found to be the same among the different racial and income groups.

16 Cities

(excluding New York)

609 mothers were surveyed in the sixteen cities listed below. 590 of these mothers buy baby food.

548 mothers were surveyed by mail questionnaire, and 61 were surveyed by personal interview.

The sixteen cities are:

Springfield, Mass., Wilmington, Del., Charlotte, N. C., Jacksonville, Fla., Columbus, Ohio, Indianapolis, New Orleans, La., Kansas City, Mo., Tulsa, Okla., Minneapolis, Des Moines, Salt Lake City, Corpus Christi, WKN-9/8.

St. Louis, Mo., San Francisco, Seattle, Wash.

Market Analysis Department,
June, 1945.

[fol. 1092] : GOVERNMENT'S EXHIBIT 419C

1. Do you buy strained or chopped baby foods?

Yes ☐ No ☐

(If you checked "Yes" please answer these questions)

2. What brand do you usually buy? . . .

3. Does this brand come in:

A glass jar ☐ — A tin can ☐

4. If you could buy your regular brand of strained or chopped baby food in either a glass jar or tin can (both at the same price), which would you choose?

A tin can ☐ A glass jar ☐

5. Please tell why you prefer the container you checked in question 4.

6. If you could buy your regular brand at a lower price in tin cans than in glass jars which would you choose?

A glass jar ☐

A tin can ☐

Market Analysis Department,
June, 1945.

[fol. 1093]

BABY FOOD SURVEY

NEW YORK CITY

**CONSUMER PREFERENCE
TIN VS. GLASS**

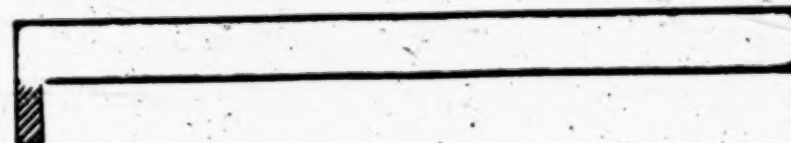
NQ %

PER CENT SCALE

0 25 50 75 100

BUY BABY FOOD IN:**GLASS**

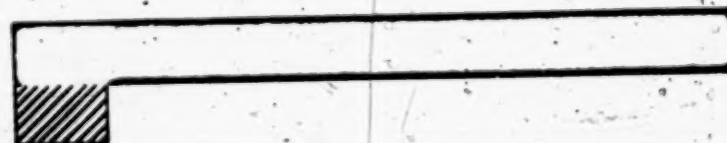
734 97

TIN19 3**TOTAL** 753 100%**AT SAME PRICE PREFER:****GLASS**

699 97

TIN19 3**TOTAL** 718 100%**IF TIN CHEAPER PREFER:****GLASS**

652 89

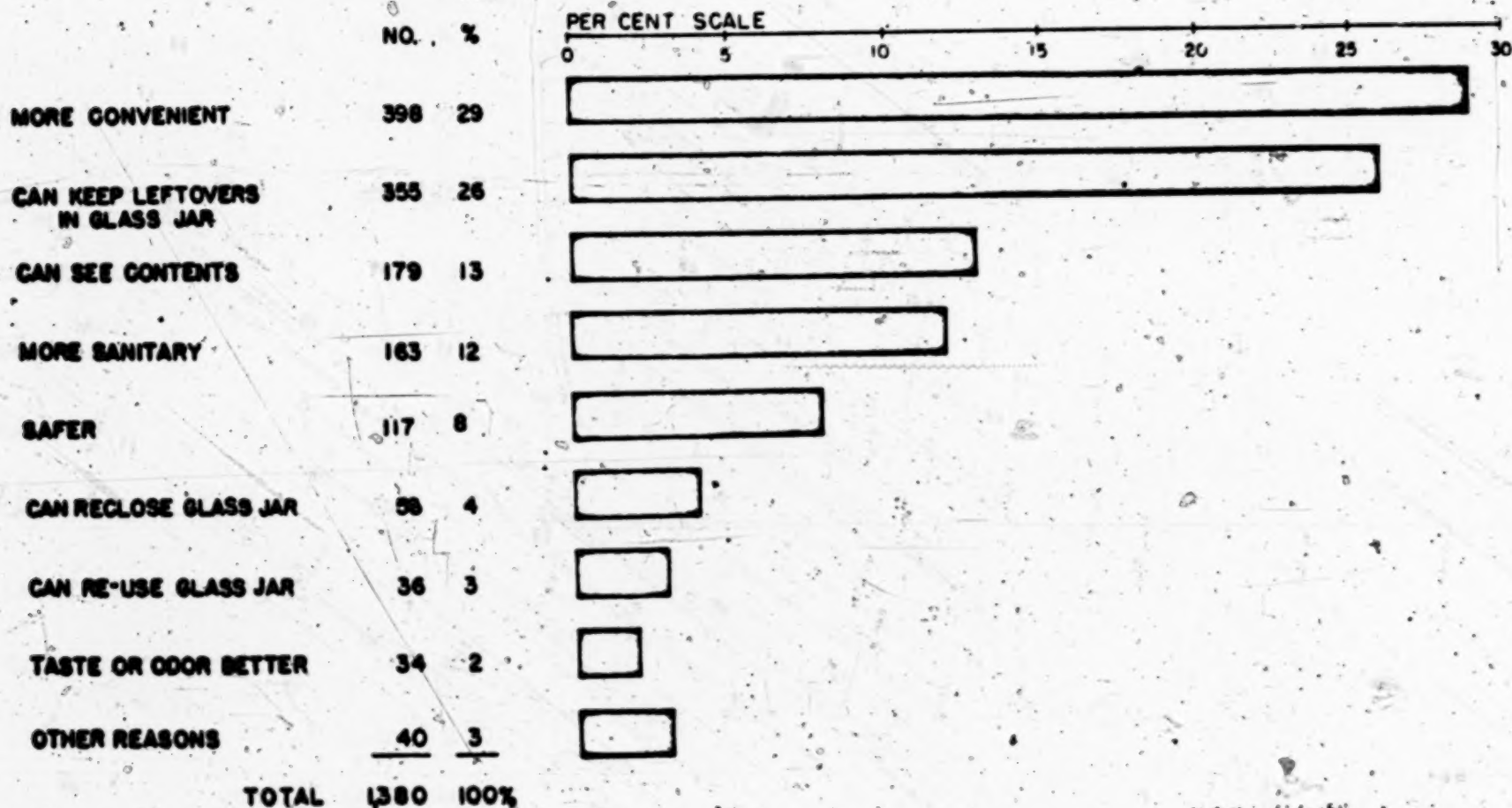
TIN78 11**TOTAL** 730 100%MARKET ANALYSIS DEPT.
JUNE 1944

[fol. 1094]

BABY FOOD SURVEY

NEW YORK CITY

REASONS FOR PREFERRED GLASS JARS AT SAME PRICE AS TIN*



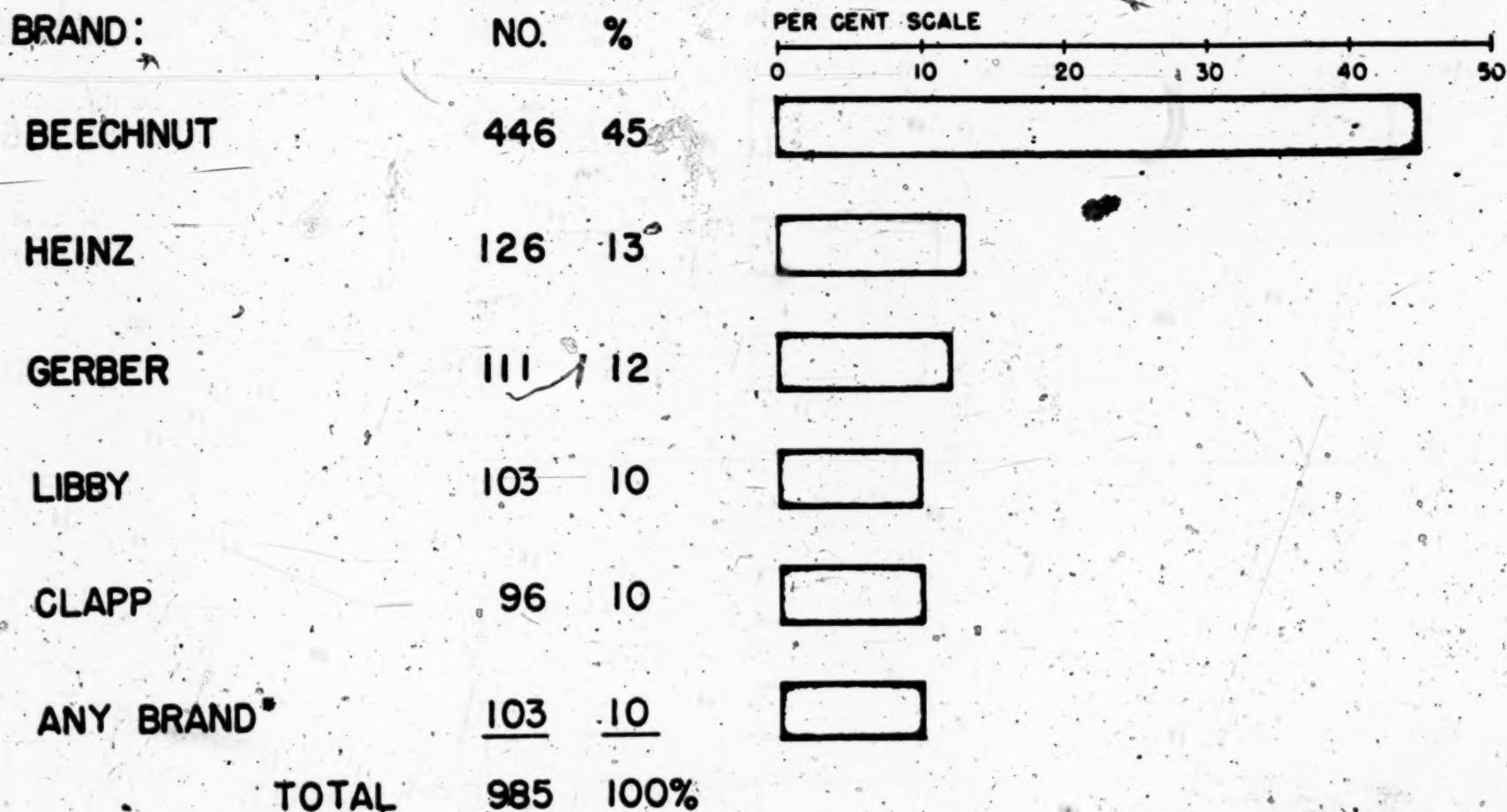
* GIVEN BY 699 PERSONS

[fol. 1095]

BABY FOOD SURVEY

NEW YORK CITY

WHAT BRAND DO YOU USUALLY BUY?



* INCLUDES WHITE ROSE (3)
AND GIBBS (1)

MARKET ANALYSIS DEPT.
JUNE 1945

BABY FOOD SURVEY

16 CITIES EXCLUDING NEW YORK

CONSUMER PREFERENCE

TIN VS. GLASS

BUY BABY FOOD IN:

GLASS

NO.	%
211	34

TIN

403	66
-----	----

TOTAL

614	100%
-----	------

PER CENT SCALE

0 25 50 75



AT SAME PRICE PREFER:

GLASS

419	74
-----	----

TIN

150	26
-----	----

TOTAL

569	100%
-----	------



IF TIN CHEAPER PREFER:

GLASS

290	52
-----	----

TIN

271	48
-----	----

TOTAL

561	100%
-----	------

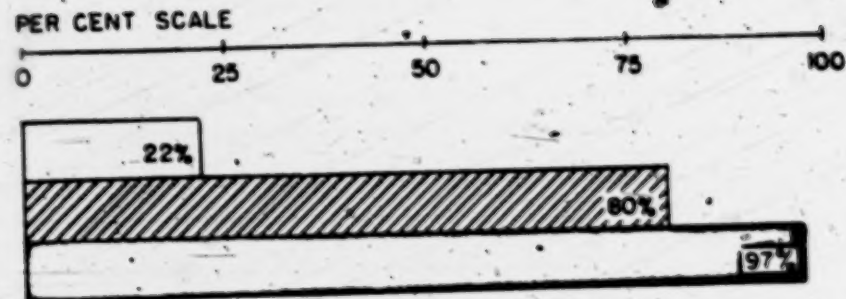


[fol. 1097]

BABY FOOD SURVEY 16 CITIES EXCLUDING NEW YORK GEOGRAPHIC DIFFERENCES IN ATTITUDES TIN VS. GLASS

NOW BUY TIN:

SALES DIVISION	NO.
EASTERN	37
CENTRAL	294
PACIFIC	72



PREFER TIN AT SAME PRICE AS GLASS:

EASTERN	10
CENTRAL	104
PACIFIC	36



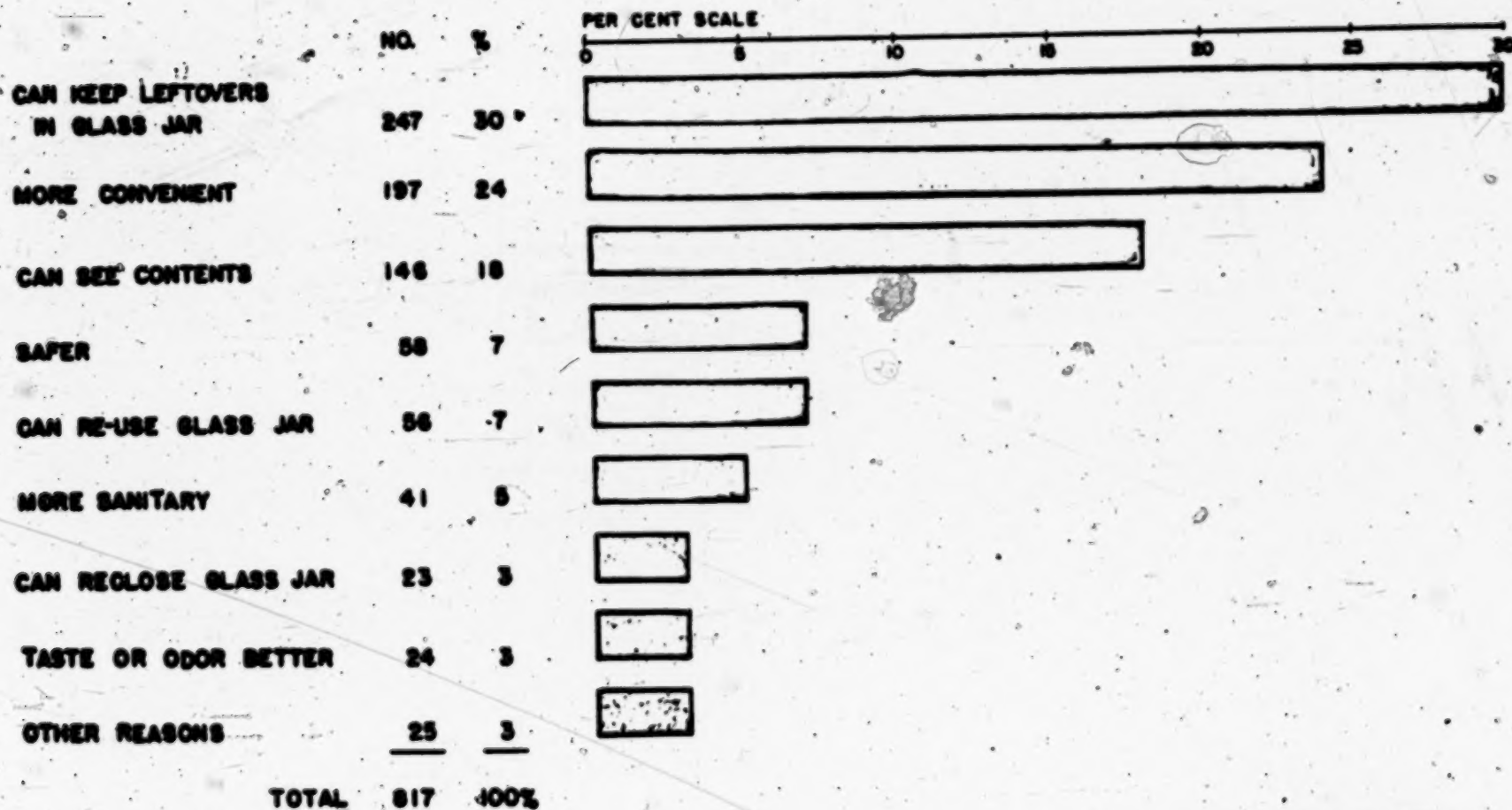
PREFER TIN AT LOWER PRICE THAN GLASS:

EASTERN	26
CENTRAL	194
PACIFIC	51



[fol. 1098]

BABY FOOD SURVEY **16 CITIES EXCLUDING NEW YORK** **REASONS FOR PREFERRING GLASS JARS AT SAME PRICE AS TIN***



* GIVEN BY 419 PERSONS

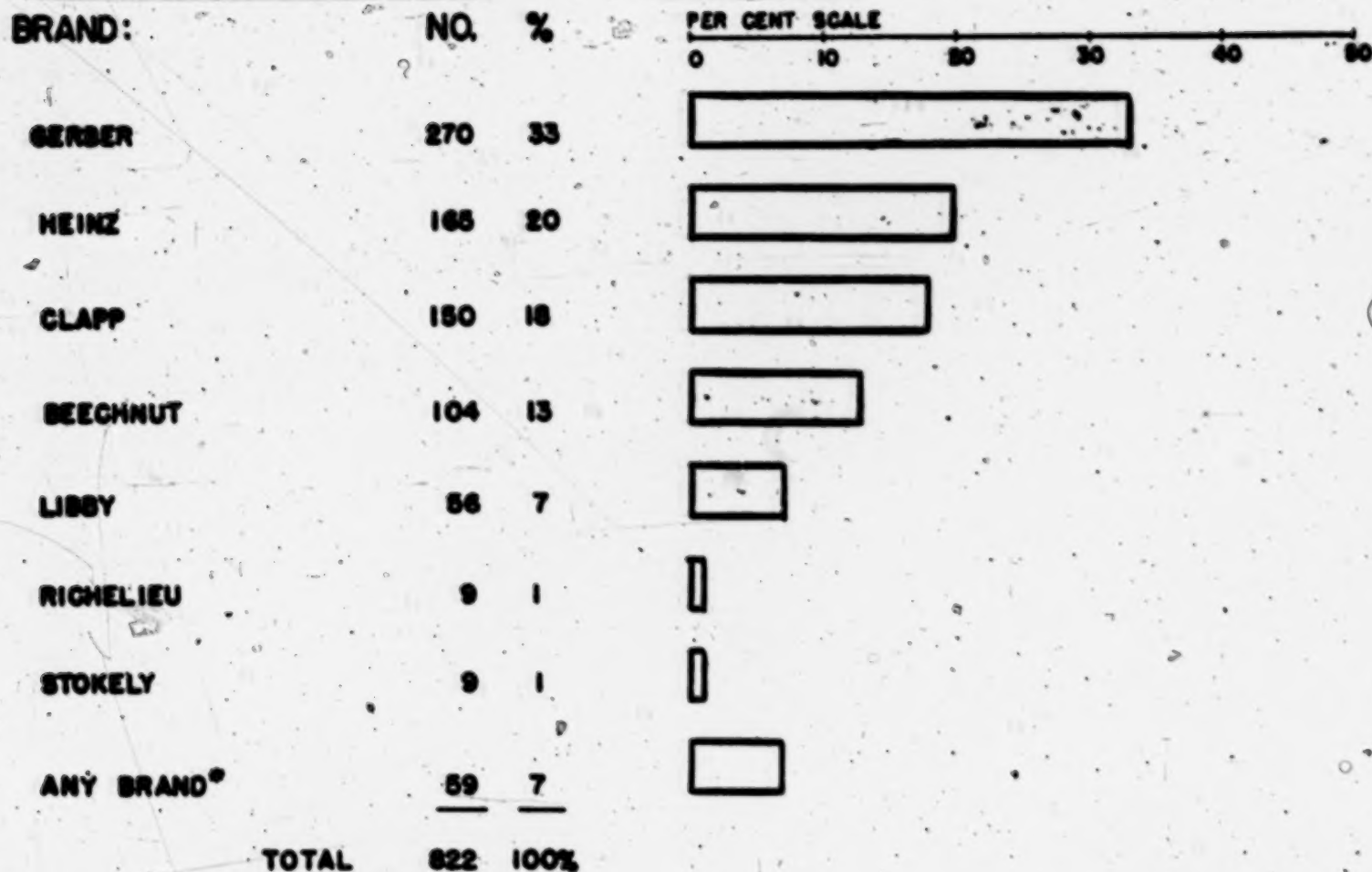
MARKET ANALYSIS DEPT.
 JUNE 1948

[fol. 1099]

BABY FOOD SURVEY

16 CITIES EXCLUDING NEW YORK

WHAT BRAND DO YOU USUALLY BUY?



* INCLUDES CAMPBELL (3), MISS PALEY (3),
JACK SPRATT, FAIRBANK, AND MEAD (1).

MARKET ANALYSIS DEPT.
JUNE 1946

[fol. 1100]

GOVERNMENT'S EXHIBIT 420

Los Angeles, California

Use, Attitudes and Opinions of Cans vs. Glass Jars
For Prepared Baby Food
Among Young Mothers and Doctors

Made for the Continental Can Company, Inc.
February, 1954
By S-D Surveys, Inc.

[fol. 1101] GOVERNMENT'S EXHIBIT 421A

Continental Can Company, Inc.

Internal Correspondence

To: Location #43—Head Office
Attention: Mr. W. K. Neuman
From Location: #43—Head Office
Date: August 13, 1953
Refer To: Request for Product Development Project
Subject: Tomato Catsup Can

R. Larson:

I've sat on this too long already—what do you think?

In reviewing food products packed in containers other than metal cans, it has occurred to us that tomato catsup, now packed exclusively in glass in retail sizes, presents a potential market for us. The results of a preliminary study of this problem are outlined below.

Previous Studies. The idea of catsup in cans is not new. In 1938, 1946, and again in 1949, the possibilities were investigated, giving consideration to various can-making materials and techniques then available. In each instance, the project was abandoned because of the corrosive properties of the product, and its tendency to change color when exposed to air.

The most thorough investigation, that of 1949, included a small test pack of catsup in a 12 ounce cap-sealed cone top can. Several plate and enamel combinations were tested.

Storage life and usage tests were made. After 15 months at room temperature (and 11 months at 98°F) pressure developed within the most promising cans. Results of a 22 day usage test were similarly sub-standard.

A major limiting factor appears to have been the difficulty in fabricating an enamelled cone top with low metal exposure.

No controls of bottled catsup were reported as being included in the tests.

Preliminary Market Analysis: The bulk of the tomato catsup packed in the United States goes into retail-sized

bottles with a capacity of 12 fluid ounces (net weight of product 14 oz.). Average annual pack of such containers for 1951, 1952, and 1953 was:

Tomato Catsup	377,000,000 bottles
Chile Sauce	23,000,000 bottles
Total annually	400,000,000 bottles

Assuming that 50% of this potential could be switched to metal, and that Continental's participation was 50% of the metal business, we would then enjoy a volume of:

100,000,000 cans @ \$30.50/M \$3,050,000

Glass Container: Specifications of a typical glass container, made by Owens-Illinois, are outlined below:

[fol. 1102]

Height overall	804
Diameter	206
Volume, fl. oz.	12.5
Shelf space required, cu. in.	19.6
Tare weight, ounces.	9.8
Gross weight, filled, ounces.	23.6
Material	Clear white glass
Brand identification	Label
Closure	White "vapor-vacuum" cap
Cost per M (delivered without caps)	
Bulk	\$26.10
Add for reshippers	8.90
Cost of closure, per M	6.00

No figures are available on spoilage through breakage, but it can be safely assumed that, with a hot-fill product, such losses will require consideration.

Can-Making Materials

At present, 603x700 open-top cans are used for institutional packs of catsup. Choice of Container manual specifies;

Body: 1.25# HDTP—I.S.E.

Ends: 1.25# HDTP—I.S.E. or #25 Electrotin.—I.S.E.

The repeated opening and closing of a small container, in household use, requires a package which will protect the product and metal plate against oxidation and corrosion under more difficult circumstances. It may prove desirable to investigate such materials as aluminum cones, or plastic spouts, in addition to enamel and tin plate research.

Requirements For Can: In developing a metal package for catsup, the basic advantages of metal should be considered, particularly:

- (1) Metal is lighter than glass
- (2) Metal is more resistant to temperature and impact failure.
- (3) Metal may be lithographed.
- (4) Being non-transparent, the metal package remains attractive when partly empty.
- (5) Metal containers usually require less space than glass bottles of equal volume.

In addition, the metal catsup package should conform to the following general specifications required by the method in which the product is packed and used:

- [fol. 1103] (1) Can should hold 12 fluid ounces (14 oz. net weight) of product.
- (2) Can should resist processing temperatures up to 190° F.
 - (3) Can should be hermetically sealed.
 - (4) Can should be reclosable.
 - (5) Can should be suitable for dispensing product.
 - (6) Can should be attractive enough to place on restaurant tables, etc.
 - (7) Can must show cost advantage (delivered to consumer).

Further specifications can be developed when a detailed study is made in connection with development of the new container.

12-Ounce Cone Top Beer Can: One possible package, the cap-sealed cone top beer can, has been previously considered for catsup. While other packages may prove more suitable for catsup, the cone top can at least merits consideration, and can be readily compared to a glass bottle.

Beer can specifications appearing to apply most closely to catsup would be:

Body: 1.25# HDTP, I.S.E.
(Outside lithography extra)

Bottom: 1.25 # HDTP, I.S.E.
Standard or multibeaded contour.

Top: 1.25 # HDTP, I.S.E.
Added shoulder to permit vacuum cap to be
pried off with knife.

This can is thus similar to the beer can, but with a higher tin coating, no wax lining, and changed end contours. The height could also be reduced slightly, since the domed bottom is eliminated.

Such a can would compare with the glass bottle as follows:

Specification	Bottle	Can
Height overall	804	503
Diameter	208	211
Volume, fluid oz.	12.5	12.5
Shelf space required, cu. in.	19.6	14.0
Tare weight, ounces	9.4	2.9
Estimated Price per M (without caps)		
Bulk	\$26.10	\$30.50
Add for reshippers	\$ 8.90*	\$ 3.58**
Shipment to canner, estimated	(included)	\$ 1.00
Cost of Closure, per M	\$ 6.00	\$ 6.00
Typical transportation, filled bottles (Baltimore to Chicago)	\$12.14	\$ 8.70
Typical total cost to consuming area (excluding product, etc.)	\$53.14	\$49.78

*—Includes separators and set-up.

**—No set-up charge; separators not required.

[fols. 1104-1131] For comparative purposes, we have assumed the same closure for can and bottle. However, a substantial saving would be realized by us if a screw cap at perhaps \$3.00/M, proved satisfactory for our containers.

Conclusions

Assuming that a suitable 12 ounce can, such as the above, can be developed, its advantages would be:

- (1) A lower total cost for container delivered to consumer. The typical saving of \$3.36 shown comes entirely from the cost of shipping the filled container, and will vary depending on the distance from packer to market. West Coast canners would therefore be particularly susceptible to a can. In California, which packs 33% of U. S. total of Tomato Products, our participation is 28%, compared

to U. S. Average CCC participation of 37% (3 yr Average).

- (2) Reduced space requirements. The bottle requires 40% more space, causing higher warehouse costs, retail shelf usage, and home storage capacity. No dollar value reflecting this advantage of the can is presently available.
- (3) Reduced breakage in packing and distribution.
- (4) Presumably, a more attractive package, through use of lithography (to be confirmed by consumer survey)
- (5) A more stable container. The wider base and lower center of gravity make the can harder to tip over.

Recommendations: It is therefore recommended that the Package Development Department be asked to undertake the problem of designing a retail-sized metal container for tomato catsup.

Consideration should include, but not be limited to, a modification of the 12-ounce cap sealed beer can.

This office will be glad to assist Mr. Larson in this matter in any way that may be necessary.

L. C. Dudley, per S. B. Smart.

SBS/dh

[fol. 1132] GOVERNMENT'S EXHIBIT 423

Packaging Guide for Pressure Dispensed Foods

Barbecue Sauce

Product No. II

Description: Barbecue sauce is a formulated liquid sauce used primarily to season meats as they are being roasted, broiled or grilled. Originally this was a vinegar-base product with added salt, pepper and other spices; but now it is available on the commercial market with a wide range of basic ingredients such as salad oil, tomato, pineapple pulp, or pimiento pulp. Its consistency may range from that of water to a thicker sauce similar to catsup. Because of this wide variance in ingredients and consistency, no single

packing procedure will be applicable to all barbecue sauces.
Suggested Packing Procedure:

1. After rinsing the cans, the product is filled into them at a temperature of 190 to 200°F. A fill of 7 to 10 fluid ounces is used for 12-ounce containers and 10 to 13 fluid ounces for 16-ounce containers dependent on the product ingredients and the spray characteristics desired. The prescribed fill is generally inversely proportional to the solubility of gas propellant employed.
2. The filled cans are closed immediately by crimping the valve in place and are then inverted to allow hot product to sterilize the headspace area of the can. Note: This procedure should provide sufficient sterilization for most barbecue sauce formulations. However this factor requires checking for each product encountered. There are other sterilization procedures under study.
3. Cans are cooled to 85°F in cold water bath or sprays.
4. Cooled product is gassed through valve with desired gas at required pressure. To obtain a liquid stream of product, nitrogen gas* charged at 75 to 95 psig pressure is suggested. To obtain a foamy stream or spray; nitrous oxide, carbon dioxide or a suitable mixture of these two gases is used at a pressure range of 85 to 100 psig. Shaking is employed while charging these latter gases to hasten solution and bring container to equilibrium pressure. The exact pressure employed depends on the product formulation and controls to a high degree the percent product delivery obtained.

* Use of Nitrogen covered in U.S. Patent #2,723,200.

Containers: As with all formulated products, shelflife studies must be conducted before a specific container recommendation can be offered. Suggested container variables that are expected to perform best with the product may be obtained from Metal R & D. Any available knowledge of product's composition would be helpful for this purpose.

Valves: Several of the existing valves could be used to dispense many barbecue sauces satisfactorily. Because the

dispensing characteristics are dependent to a great degree on the actuator design, many sauces will require a specially designed actuator button to produce desired dispensing characteristics. When this is required, a valve manufacturer should be consulted.

(For Customer Research Use Only)

[fol. 1133] Because of the pulpy nature and discrete spice particles found in most barbecue sauces, we believe the minimum valve orifice size should be .040", and there will be occasions when this size will require passing the product through .020" screen or homogenizing it. Two valves that have been most promising in our laboratory work with barbecue sauce are a Clayton foam type valve and a Precision dip tube type valve. There are undoubtedly others that will perform just as satisfactorily.

Dispensing Procedure:

The dispensing procedure employed for barbecue sauce will depend on the valve used and the dispensing characteristics desired. Where a soluble gas has been employed for obtaining foamy stream or spray dispensing, the can should be shaken prior to opening valve, and shaking is required after every 5 to 10 seconds of use. If an insoluble gas is used to give a non-aerated stream, no shaking is required prior to dispensing or during dispensing of product. Product delivery should range from 90 to 98% of contents by weight depending on product viscosity.

Remarks:

Many questions concerning a product such as this can only be resolved after knowing the properties of the specific product involved and the customer's requirements. Therefore, Metal R & D should be consulted whenever any questions arise concerning a specific customer's product.

Metal Research & Development, Continental Can Company, Inc.

PBG:jo'h
12/26/57

(For Customer Research Use Only)

[fol. 1134] GOVERNMENT'S EXHIBIT 424

Packaging Guide For Pressure Dispensed Foods

Chocolate Syrup

Product No. I

Description: Chocolate syrup, or more commonly, chocolate flavored syrup is a formulated free flowing sugar base product flavored with chocolate and/or cocoa, salt and vanillin. It consists essentially of 55 to 75% sugar and 25 to 40% water. It is used mainly as a sundae topping or as a flavoring agent for milk beverages.

Suggested Packing Procedure:

1. After rinsing the cans, the product is filled into them at a temperature of 190 to 200°F. A fill of 9 to 10 fluid ounces is suggested for 12 ounce containers and 12 to 13 fluid ounces for 16 ounce containers.
2. The cans are closed immediately by crimping the valve in place and are then inverted to allow hot product to sterilize the headspace area of the can.
Note: This procedure should provide sufficient sterilization for most chocolate syrup formulations. However, this factor requires checking for each product encountered.
3. Cans are cooled to 85°F in cold water or by another suitable cooling method.
4. Cooled product is gassed through valve. Charging with Nitrogen gas at 75 to 95 psig pressure with no shaking is suggested to obtain a non-aerated stream and greatest product delivery.* The exact pressure employed is dependent on the viscosity of the product. More soluble gases such as Nitrous Oxide or Carbon Dioxide will produce an aerated product of lighter color.

* Use of Nitrogen for this purpose is covered in U.S. Patent #2,723,200.

Containers: As with all formulated products, shelflife studies must be conducted before a specific container recom-

mendation can be offered. Suggested container variables that are expected to give the best performance with the formulation may be obtained from Metal R & D. Any available knowledge of product's composition would be helpful for this purpose.

Valves: Several of the existing valves could be used to dispense chocolate syrup satisfactorily. We have experimented primarily with a Clayton foam type valve and a Precision dip tube type valve with a beverage actuator in the laboratory. There are undoubtedly others that will perform just as satisfactorily.

Dispensing Procedure: No shaking is required prior to dispensing the product. Cans with dip tube valves are dispensed in upright position. Those with foam type valves are dispensed in inverted position. Product delivery should range from 90 to 98% of contents by weight depending on product viscosity.

Remarks: This information will not be entirely applicable to all chocolate syrup formulations that will be encountered. Therefore, Metal R & D should be consulted whenever any questions arise concerning a specific customer's product.

Metal Research & Development, Continental Can Company, Inc.

PBG:joh
12/26/57

(For Customer Research Use Only)

[fol. 1135] GOVERNMENT'S EXHIBIT 425

Packaging Guide for Pressure Dispensed Foods

Salad Dressings

Product No. III

Description: Salad dressings are formulated liquid to semiliquid products that are used to savor vegetable or fruit salads. Their formulations are varied and are generally considered as a trade secret by the manufacturer. Some

of the more common types are mayonnaise, French dressing and Russian dressing. All are highly acid and have a pH range of 3.0 to 4.5. Most salad dressings contain vegetable oils, water, salt and spices as their main ingredients. Analyses of several salad dressings showed water content to range from 10 to 70%, fat to range from 6 to 83%, and salt to range from 1.3 to 1.6%.

Mayonnaise is the only salad dressing included in the Food and Drug Administration Standards at this time. They describe the product as follows:

"The semisolid emulsion of edible vegetable oil, egg yolk, or whole egg, a vinegar, and/or lemon juice with one or more of the following: salt, flavoring, sugar, and/or dextrose. The finished product contains not less than 50% of edible vegetable oil."

Suggested Packing Procedure:

The packing procedure employed for salad dressings will vary depending on the specific product formulation and the dispensing characteristics desired. The following are suggested packing procedures for several of the variations in salad dressings that might be encountered:

1. The cans should be rinsed with a stream of warm, clean water prior to filling any salad dressing product into them.
2. The product should be filled at as high a temperature as practical to obtain maximum sterilizing advantage from the heat. With some dressings that are not adversely affected by heat, this can be at 190 to 200°F while other less stable products such as mayonnaise will require a filling temperature of 40 to 70°F.

A fill of 7 to 10 fluid ounces is employed for 12-ounce containers and 10 to 13 fluid ounces for 16-ounce containers dependent on the formulation and the dispensing characteristics desired. In general, the prescribed fill is inversely proportional to the solubility of the gas propellant used.

3. The filled cans are closed immediately by crimping the valve in place and hot filled cans are then in-

verted to allow hot product to sterilize the headspace area of the can.* Vacuum crimping is preferred, particularly for cold filled products, to reduce the headspace oxygen in the container. The same objective might be accomplished by purging the filled cans with an inert gas prior to seating the valve cup.

* This procedure should provide sufficient sterilization for most salad dressing formulations. However, this factor requires checking for each product encountered. There are other sterilization procedures under study.

[fol. 1136] 4. Cans of hot filled products are cooled to 85°F in cold water baths or sprays.**

** Studies in progress at Metal R & D indicate that gas charging of hot products might be employed, if desired, particularly when propellants of low solubility are to be used. The hot product must be charged with the gas at an appreciably higher charging pressure to obtain an equivalent equilibrium pressure at 70°F. The charging pressure required with gases having high solubility for hot products may prove to be too high to be practical.

5. Cooled product is gassed through the valve with the required gas at required pressures. To obtain a liquid stream of product having minimum aeration, nitrogen gas*** charged at 75 to 95 psig pressure is suggested. To obtain a foamy stream or spray; more soluble gases such as nitrous oxide or carbon dioxide are used at a pressure range of 85 to 100 psig. Shaking is employed for 10 to 20 seconds while charging these latter gases to hasten solution and bring container to equilibrium pressure. The exact pressure employed depends primarily on the product formulation and controls to a high degree the percent product delivery and overrun obtained.

***Use of Nitrogen covered in U.S. Patent #2,723,200.

Containers:

As with all formulated products, shelflife studies with salad dressings must be conducted before a specific container recommendation can be offered. Suggested container variables that should be tested with the product may be obtained from Metal R & D. Knowledge of product's composition and chemical properties is necessary to Metal R & D in making this decision.

Valves:

Several of the existing valves could be used to dispense many salad dressings satisfactorily. Because the dispensing characteristics are dependent to a great degree on the actuator design, many dressings may require a specially designed actuator button to produce desired dispensing forms. When this is required, a valve manufacturer should be consulted.

Two valves that have been most promising in Metal R & D work with salad dressing are a Clayton foam type valve and a Precision dip tube type valve. There are undoubtedly others that will perform just as satisfactorily.

As a word of caution, most salad dressings are considered as highly corrosive products, particularly in the headspace area of the can. Therefore a well coated valve cup is required with a low metal exposure enameled dome to avoid perforations in this area.

[fol. 1137] Dispensing Procedure:

The dispensing procedure employed for salad dressings will depend on the valve used and the dispensing characteristics desired. Where a soluble gas has been employed for obtaining foamy stream or spray dispensing, the can should be shaken prior to opening valve, and shaking is required after every 5 to 10 seconds of use. If an insoluble gas is used to give a non-aerated stream, no shaking is required prior to dispensing or during dispensing of product. Product delivery should range from 90 to 98% of contents by weight depending on product viscosity. If the product is intended to be refrigerated prior to consumer use, the effect of the lower temperature on can pressure and result-

ing dispensing characteristics must be considered when developing the packing specifications.

Remarks:

Many questions concerning a product such as this can only be resolved after knowing the properties of the specific product involved and the customer's requirements. Whenever Metal R & D is consulted concerning a specific customer's product, as much information as possible relating to the pressure dispensed product should be made available.

Metal Research & Development, Continental Can Company, Inc.

PBG/efh

4/8/58

(For Customer Research Use Only)

[fol. 1138] GOVERNMENT'S EXHIBIT 426

Rev. 1

Packaging Guide for Pressure Dispensed Foods

Dressings for Salad

Product No. III

Description: Dressings for salad are formulated liquid to semisolid products that are used to savor vegetable or fruit salads. Their formulations are varied and are generally considered as a trade secret by the manufacturer. Some of the more common types are mayonnaise, French dressing and Russian dressing. All are highly acid and have a pH range of 3.0 to 4.5. Most dressings contain vegetable oils, vinegar, salt and spices as their main ingredients. Three types of dressing: mayonnaise, French dressing, and salad dressing are included in Food and Drug Administration Standards at this time. Their general definitions are given at the end of this write-up. Dressings included in these definitions must contain 30 to 65% by weight vegetable oil depending on the dressing. For any dressings that are to be moved in Interstate Commerce and do not fall under the

three defined products, it is suggested the Food and Drug Administration be consulted concerning labeling requirements.

Suggested Packing Procedure:

The packing procedure employed for salad dressings will vary depending on the specific product formulation and the dispensing characteristics desired. The following are suggested packing procedures for several of the variations in salad dressings that might be encountered:

1. The cans should be rinsed with a stream of warm, clean water prior to filling any salad dressing product into them.
2. The product should be filled at as high a temperature as practical to obtain maximum sterilizing advantage from the heat. With some dressings that are not adversely affected by heat, this can be at 190° to 200°F. while other less stable products such as mayonnaise will require a filling temperature of 40° to 70°F. The latter cold-filled products usually must be marketed and consumed under refrigerated storage conditions.

A fill of 7 to 10 fluid ounces is employed for 12-ounce containers and 10 to 13 fluid ounces for 16-ounce containers dependent on the formulation and the dispensing characteristics desired. In general, the prescribed fill is inversely proportional to the solubility of the gas propellant used.

3. The filled cans are closed immediately by crimping the valve in place and hot filled cans are then inverted to allow hot product to sterilize the headspace area of the can.* Vacuum crimping is preferred, particularly for cold filled products, to reduce the headspace oxygen in the container. The same objective might be accomplished by purging the filled cans with an inert gas prior to seating the valve cup.

* This procedure should provide sufficient sterilization for most salad dressing formulations. However, this factor requires checking for each product encountered. There are other sterilization procedures under study.

[fol. 1139] 4. Cans of hot filled products are cooled to 85°F. in cold water baths or sprays.**

**Studies in progress at Metal R & D indicate that gas charging of hot products might be employed, if desired, particularly when propellants of low solubility are to be used. The hot product must be charged with the gas at an appreciably higher charging pressure to obtain an equivalent equilibrium pressure at 70°F. The charging pressure required with gases having high solubility for hot products may prove to be too high to be practical.

5. Cooled product is gassed through the valve with the required gas at required pressures. To obtain a liquid stream of product having minimum aeration, nitrogen gas*** charged at 75 to 95 psig pressure is suggested. To obtain a foamy stream or spray, more soluble gases such as nitrous oxide or carbon dioxide are used at a pressure range of 85 to 100 psig. Shaking is employed for 10 to 20 seconds while charging these latter gases to hasten solution and bring container to equilibrium pressure. The exact pressure employed depends primarily on the product formulation and controls to a high degree the percent product delivery and overrun obtained.

***Use of Nitrogen covered in U. S. Patent No. 2,723,200

Containers:

As with all formulated products, shelf-life studies with salad dressings must be conducted before a specific container recommendation can be offered. Suggested container variables that should be tested with the product may be obtained from Metal R & D. Knowledge of product's composition and chemical properties is necessary to Metal R & D in making this decision.

Valves:

Several of the existing valves could be used to dispense many salad dressings satisfactorily. Because the dispens-

ing characteristics are dependent to a great degree on the actuator design, many dressings may require a specially designed actuator button to produce desired dispensing forms. When this is required, a valve manufacturer should be consulted.

Two valves that have been most promising in Metal R & D work with salad dressing are a Clayton foam type valve and a Precision dip tube type valve. There are undoubtedly others that will perform just as satisfactorily.

As a word of caution, most salad dressings are considered as highly corrosive products, particularly in the head-space area of the can. Therefore, a well coated valve cup is required with a low metal exposure enameled dome to avoid perforations in this area.

[fol. 1140] Dispensing Procedure:

The dispensing procedure employed for salad dressings will depend on the valve used and the dispensing characteristics desired. Where a soluble gas has been employed for obtaining foamy stream or spray dispensing, the can should be shaken prior to opening valve, and shaking is required after every 5 to 10 seconds of use. If an insoluble gas is used to give a non-aerated stream, no shaking is required prior to dispensing or during dispensing of product. Product delivery should range from 90 to 98% of contents by weight depending on product viscosity. If the product is intended to be refrigerated prior to consumer use, the effect of the lower temperature on can pressure and resulting dispensing characteristics must be considered when developing the packing specifications.

Remarks:

Many questions concerning a product such as this can only be resolved after knowing the properties of the specific product involved and the customer's requirements. Whenever Metal R & D is consulted concerning a specific customer's product, as much information as possible relating to the pressure dispensed product should be made available.

Regulations:

Certain dressings for food moving in Interstate Commerce are regulated by a Standard of Identity and Label

Statement of Optimal Ingredients promulgated August 8, 1950 under the Federal Food, Drug, and Cosmetic Act. They are covered specifically as "Mayonnaise", "French Dressing", and "Salad Dressings".

In general, mayonnaise is defined as an emulsified semi-solid food prepared from edible vegetable oil, acidifying ingredients of vinegars, lemon juice or lime juice, and certain egg-yolk-containing ingredients. It may be seasoned with salt, certain sweetening ingredients, spices other than turmeric or saffron, monosodium glutamate, or any suitable, harmless food seasoning or flavoring (other than imitations), provided it does not impart to the mayonnaise a color simulating the color imparted by egg yolk. Mayonnaise contains not less than 65 percent by weight of vegetable oil.

French dressing may be defined as a separable liquid food or an emulsified viscous fluid food prepared from edible vegetable oil and acidifying ingredients of vinegar, lemon juice or lime juice. It may be seasoned with salt, certain sweetening ingredients, spices, monosodium glutamate, any suitable harmless food seasoning or flavoring (other than imitations), tomato paste or puree, catsup, or sherry wine. It may be emulsified with any of several allowable emulsifying ingredients providing these ingredients do not exceed 0.75 percent by weight of the finished product. French dressing contains not less than 35 percent by weight of vegetable oil.

Salad dressing is the emulsified semisolid food prepared from edible vegetable oil, acidifying ingredients of vinegars, lemon juice or lime juice, certain egg-yolk-containing ingredients, and a cooked or partly cooked starchy paste prepared from food starch, wheat flour, rye flour, tapioa flour or any mixture of these. It may be seasoned or flavored with salt, certain sweetening agents, spices other than turmeric or saff-on, monosodium glutamate, or any suitable, harmless food seasoning or flavoring (other than imitations), provided it does not impart to the salad dressing a color simulating the color imparted by egg yolk. It may [fol. 1141] contain any of several allowable emulsifying ingredients, provided the quantity of these ingredients do not exceed 0.75 percent by weight of the finished product. Salad dressing contains not less than 30 percent by weight

of vegetable oil and no less egg-yolk-containing ingredient than is equivalent in egg-yolk solids content to 4 percent by weight of liquid egg yolks.

Metal Division R & D, Continental Can Company, Inc.

PBG:bw

5-9-58

[fol. 1142]

GOVERNMENT'S EXHIBIT 427

Packaging Guide For Pressure Dispensed Food

Whipped Toppings

Product No. IV

Description: Whipped toppings are frothy formulated food products used to top other foods, generally desserts, to make them more appetizing. The first pressurized food product was a whipped topping, whipped cream, which reached the market in 1948. Since that time, many different pressurized whipped creams have been marketed and more recently, several synthetic whipped creams where butterfat is partially or completely replaced with vegetable fats have become popular. The latter are classified as whipped toppings and can be obtained in several flavors. Other whipped topping possibilities are cake icings, marshmallow, and egg meringue.

A typical whipped cream type topping might consist of 25 to 30% fat, 5 to 10% sugar, 2 to 3% stabilizer (skim milk powder, gelatin, dry egg albumin or yolk, or sodium caseinate), 55 to 68% water and a flavoring agent such as vanilla.

Suggested Packing Procedure:

Since most whipped toppings can be considered somewhat similar with respect to their foamy dispensing characteristics, pH, heat stability properties and viscosity, packing and handling procedures employed for the majority of them are fairly well standardized. Most of them must be marketed and used under refrigerated storage

conditions, and have a shelf life of less than three months at 40°F. The following is the suggested packing procedure for the general line of whipped toppings.

1. The empty cans should be rinsed with a stream of warm, clean water prior to filling with product. The valves are generally dipped in a mild chlorine solution (2-3 ppm residual chlorine) prior to affixing to filled cans.

2. Products of this nature are usually filled cold at 40° to 60°F. under as sanitary conditions as possible or those regulated by law.

A fill of 6 to 7 fluid ounces of liquid product is generally employed for 12-ounce (211 x 413) containers and 9 to 10 fluid ounces for 16-ounce (211 x 604) containers. The ratio of product volume to headspace volume is purposely lower for this type product to allow for a greater charge of gas which serves to dispense the product and also aerate it. Increasing this ratio by increasing the product fill results in lower overrun¹ of dispensed product and less product delivery for same initial equilibrium pressure.

- [fol. 1143] 3. The filled cans are closed immediately by crimping the valve in place. Vacuum crimping is preferred for these cold-filled products to reduce the headspace oxygen in the container. The same objective might be accomplished by purging the headspace of the filled cans with an inert gas prior to seating the valve.

4. The sealed cans of product are gassed through the valve with the required gas at required pressures. The more soluble gases such as nitrous oxide, carbon dioxide or some mixture of these are employed to produce a whipped product. Charging pressures generally range from 90 to 130 psig. The cans are shaken violently for 10 to 30 seconds during product gassing to hasten absorption of gas in product. When the proper gassing and shaking cycle is employed, the cans will be within 3 to 5 pounds of

¹ Overrun is the percent volume increase between the dispensed product and the filled product.

equilibrium pressure after this operation. Equilibrium pressures range from 85 to 100 psig at 70°F.

5. Charged containers can be passed through a water bath to detect any leakers through evolution of bubbles. A mild cleansing agent might be desired in the water during this operation to clean spilled product from the outside of the containers. The water should be treated with chlorine (2-3 ppm residual chlorine) to keep the bacteria count minimized.

Containers:

As with all formulated products, shelf life studies with whipped toppings must be conducted before a specific container recommendation can be offered. Suggested container variables that should be tested with the product may be obtained from Metal R & D. Knowledge of product's composition and chemical properties is necessary to Metal R & D in making this decision.

Valves:

The most popular valve employed for whipped toppings is the foam type valve which has no dip tube and requires inversion of the container for dispensing. Because of its simpler construction and less material requirements, this style valve is less costly than the spray type valves. It is supplied by several valve manufacturers. Among these are: Clayton Pressure Products of St. Louis, Super Whip, Inc. of Chicago, Dairy Whipt, Inc. of Chicago, and Pressure Dispensers, Inc. of Hollywood, California.

There are spray type valves that may be used successfully with some whipped toppings and permit upright dispensing of product. These would cost more and our experience with them for this purpose is limited. They are available from such concerns as Precision Valve Corp. of Yonkers, N. Y. and Clayton Pressure Products of St. Louis.

Dispensing Procedure:

In order to assure the most effective dispensing of whipped toppings, the containers should be shaken prior to each use and after every 5 to 10 seconds of use. Also

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with foam type valves which require container inversion for use, the container should be held a few seconds in the inverted position prior to operating valve to allow product [fol. 1144] to flow to the valve area. Following this procedure will minimize product splattering and result in greatest obtainable product delivery and overrun. For most whipped toppings, product delivery is expected to average 90% of filled contents and overrun should range from 175 to 225%.

Remarks:

Many questions concerning a product such as this can only be resolved after knowing the properties of the specific product involved and the customer's requirements. Whenever Metal R & D is consulted concerning a specific customer's product, as much information as possible relating to the pressure dispensed product should be made available.

Metal Division R & D, Continental Can Company,
Inc.

PBG:efz
7/9/58

(For Customer Research Use Only)

[fol. 1145] GOVERNMENT'S EXHIBIT 429

Liquid Detergents

Analysis of the Potential Market for Metal Cans
Commercial Research Department

January 1954

[fol. 1146] Continental Can Company, Inc.

100 East 42nd Street
New York 17, N. Y.

January 19, 1954.

To: Mr. L. C. Mackelden

Subject: Liquid Detergents—Analysis of the Potential Market

The accompanying report summarizes the results of our investigation of the new liquid synthetic detergents as a potential market for metal cans, and Continental's prospects in this field. The findings and conclusions, which precede the main part of the report, are self-explanatory, but I would like to emphasize the following key points:

1. There is a real opportunity for Continental to enter a new and rapidly growing market. There is a definite trend toward the use of cans in place of the glass packages now used by most producers. The non-breakability feature is particularly important, to consumers, for liquid detergents and Continental should expedite its development work in order to enter this market, *as soon as possible*.
2. Although 12 ounces is not yet established as a standard size, it will apparently be a leading size, and appears to be one best suited for metal cans. Total industry requirements for 1955 are estimated at about 130 million containers (12 ounce equivalent). A market for 260 million—with liquids at 10% of the total synthetics market—is within sight in a few years.

Because the experience on which to base growth projections is extremely limited, and because only a few companies could supply any helpful information, these estimates should be treated as very rough approximations. The only thing that is clear is that growth has been extremely rapid and is still continuing. We hope, as additional experience is gained during this year in the marketing of liquids, to be able to refine these estimates for you.

We trust this report will be helpful. Additional copies are available for further distribution if you wish them.

D. H. Walker.

DHW/mla

cc: Messrs: P. P. Wojtul—#43,
R. G. Fisher—#43,
W. K. Neuman—#43.

Summary and Conclusions

Liquid Synthetics in Metal Cans

The Market

Existing Brands

The Future of Liquids

The Outlook for Cans

I. The Market for Liquid Synthetic Detergents ...

A. History of Synthetic Detergents

B. The Detergent Market—Synthetics vs. Soap

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II. The Metal Package

A. Technical Specifications of the Can

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C. Prospects for the Metal Can

D. Competition

III. Technical Notes on the Nature of Liquid
Synthetic DetergentsCommercial Research Department,
January 1954.

[fol. 1148] Summary and Conclusions

Liquid Synthetics in Metal Cans

The packaging of liquid synthetic detergents is rapidly developing into an important new market for metal cans. Liquids, the most recently developed form of synthetic detergents, are the brand new answer to dishwashing problems. They are already established as one of the leading dishwashing products even though they've been on the market only four years and have been strongly promoted for only two. At present, most of these liquids are packaged in glass. But metal is also in the field and there appears to be a definite trend toward *increased use of cans* as opposed to glass. With expanding demand and growing acceptance of the metal container, Continental has the opportunity to enter a new area of packaging.

The Market

Percentagewise, the liquid product is the fastest growing portion of the synthetic detergent market. And so far there are no signs of a let-up. In 1949, liquids made up only .3% of all packaged synthetics sold. (See Table II, Section I.) By the end of 1953, they constituted a full 3% of total volume.

The basic reason for this tremendous increase is the growing consumer preference for synthetics—both solid and liquid—over soap. The figures are really impressive. In only five years, from 1948 to 1953, the 'synthetics' share of the 3.3 billion pound market for cleansers rose from 20% to 75%. What made consumers so readily accept this new product? First, the shortages of soap products during and immediately following World War II forced consumer to try substitutes. Then it was found that synthetics had many natural advantages over soap—quick and more thorough [fol. 1149] washing, faster suds formation, no dulling of washable materials and speedy rinsing. The move to synthetics was on! At all three levels of distribution—the manufacturer, the retailer and the consumer—synthetics proved, for most uses, to be superior to soap and more economical in terms of time and/or money.

The advantages of synthetics over soap apply equally

well to both solids and liquids. But liquids have even more to be said in their favor for light washing. They are generally milder, easier to pour and more readily soluble. They are not "dusty" and cannot abrade washable materials.

Existing Brands

There are five liquid brands currently competing for the housewives' favor. They are "Joy", "Lux", "Glim", "Chat", and "Rol". Of the five, only "Joy" a Procter and Gamble product, has complete national distribution, at present. Since its introduction on a countrywide scale in mid-1951, the name "Joy" has become almost synonymous with liquid detergent. Heavy promotions, millions of advertising dollars and concentrated merchandising and selling campaigns have paid off and "Joy" captured a hefty 80 to 85% of the liquid market.

After Procter and Gamble educated the public to the use of liquid synthetics via "Joy", Lever Brothers introduced liquid "Lux" in July of 1953. Consumer acceptance of this product exceeded Lever's most optimistic hopes. Their original sales forecast has recently been revised upward and they are thinking about expanding production facilities.

Despite competition from "Lux", sales of "Joy" have steadily increased. With both companies promoting their products with huge advertising budgets and concentrated merchandising campaigns, consumers are using *more liquids* rather than just switching from one liquid brand to another and total demand is growing rapidly.

[fol. 1150] The Future of Liquids

Based on the sales performance of the existing products, liquids are expected to take over more than 5% of the packaged synthetic detergent market by 1955, compared with 3% in 1953. The five products already on the market should do the job and if the manufacturers of these products decide to market more than one brand, or if new manufacturers enter the field, liquids could probably exceed 10% of the packaged synthetic market. It's hard to say when the 10% level will be reached but it should be within a few years.

Although 10% could not be called a lion's share of the total synthetic market, it still represents a very important

packaging market—approaching 260 million packages annually.

The liquid variety is used almost exclusively for dishwashing and is heavily promoted by the manufacturers for that purpose. On the other hand, synthetics as a whole are used for both laundry and dishwashing. There is no breakdown available for the amount of synthetics used for dishwashing versus laundry but assuming the total was split 50-50, a 10% penetration of the total market by liquids, would mean a 20% penetration of the dishwashing market.

The Outlook for Cans

Before the introduction of "Lux", the package material for liquids was glass. But now, although the predominant package is still glass, it looks like there is a definite trend toward the metal container. "Lux" is being marketed in 12- and 22-ounce (capacity) cans developed by American. In addition, Procter and Gamble is willing to modify their formulation of "Joy" so that it could be put up in cans. The consumers prefer metal too. According to a recent consumer survey conducted by Lever Brothers, the metal can was definitely preferred over glass for this type of product.

[fol. 1151] If we can assume a complete changeover to metal cans by 1955, the industry would need the equivalent of 130 million 12-ounce containers to package the 12.5 million gallons of liquid expected to be sold. (The number of containers would be more if more containers were smaller than 12-ounce, but this size appears to be emerging as the standard size for a canned product.) When liquids capture 10% of the market, the can demand will top 260 million. This represents total demand for liquid detergent cans.

To participate in this rapidly growing demand, Continental should expedite its development work on cans and can linings and enter this market as soon as possible. Table V (Section 1) illustrates the probable can demands on Continental at various degrees of participation in the market. At 25%, Continental would probably be called on to supply approximately 30-35 million 12-ounce cans, while at 50%, the demand would approach 70 million. At a reasonable 40% level—the level we now enjoy in beer, oil, meat, etc.—

we would be supplying more than 50 million cans by 1955—and probably close to 100 million within a few years.

It would also appear desirable that the Research Department investigate the possibilities of using a metal container similiar to the liquid detergent can for such glass-packed products as molasses, syrups, salad oil, floor and furniture polishes, cleansers, etc.

Commercial Research Department.

Prepared by: Jack Carter.

[fol. 1152] I. The Market for Liquid Synthetic Detergents

A. History of Synthetic Detergents

Development of synthetic detergents began in Germany during World War I, when shortages of fats and oils made soap substitutes necessary for industry.

The introduction of synthetic detergents in this country, in the late 1920's, met with wide industrial acceptance. Prior to World War I, industrial cleaning was done mostly with raw chemicals and with soap. The parts to be cleaned were either dipped into a bath or washed and scrubbed thoroughly. After the cleaning process the surfaces had to be absolutely free from dirt or foreign substances which might interfere with the application of subsequent finishes or with the further processing of the article. The careful and time-consuming rinsing action, necessary to free the cleansing agent from the product, materially reduced production speeds and indirectly increased costs. Thus, the requirements for a new synthetic industrial cleaning compound were: fast action, efficiency and ease in rinsing. Synthetic detergents have not only satisfied these requirements, but could also be "tailor made" to the job.

In the mid-1930's, synthetics for consumer use were marketed, but without great success. Procter and Gamble Company was a pioneer in this field with "Drene" shampoo and "Dreft" washing powders. Colgate-Palmolive Company followed shortly thereafter with "Halo" shampoo and "Vel" washing powder and both companies introduced liquid dentifrices using synthetic detergents as the cleansing agent (i.e., "Teel"). "Spic and Span", a non-sudsing syn-

thetic for use on walls and floors was brought out by Procter and Gamble shortly before World War II.

Shortages of household soap products in the War and post-War period immediately increased consumer interest in synthetic detergents. In late 1947, synthetics for consumer use emerged as a definite competitor to soap.

[fol. 1153] B. The Detergent Market—Synthetics vs. Soap

The revolution of the detergent industry, from soap to synthetics, is shown in Table I and graphically in Chart I. In 1948, synthetics had only 12% of all detergent sales (400 million pounds out of 3.4 billion); but by 1952, four years later, it had captured 47% of the 3.3 billion pound market. As of the middle of 1953, synthetics had surpassed soap, accounting for about 55% of total detergent sales.

Even overshadowing the rapid rise of synthetics has been the spectacular growth (percentagewise) of the liquid portion. Sales were a trifling \$7,900 in 1948; by 1952 they were over \$22 million (from 89,000 gallons to 6.2 million gallons). In the first 6 months of this year, dollar sales reached \$19.7 million (5.1 million gallons). A reasonable estimate for the full year should be \$45-50 million (12.5 million gallons).

C. The Packaged Market

The packaged market is the household (consumer) portion of detergent sales. As shown in Chart II, synthetics in this market are estimated to outsell packaged soaps by about 3:1, capturing an estimated 75% of total sales by the end of 1953. Five years earlier, in 1948, packaged synthetics ran a poor second having a penetration of only 20% (Table II A).

As for liquids, about half of all sales reach the consumer, the other half going to industry. In its first year of introduction to the housewife, 1949, liquid synthetic sales amounted to one-quarter of a million gallons (2 million pounds), only three-tenths of one percent of all consumer synthetic detergent purchases. By 1952 the liquid portion rose to 1.7%, 3.1 million gallons (25 million pounds), more than an 11-fold increase. Sales in the first half of 1953 show liquids at a 2.4% penetration, having a sales volume of 2.5 million gallons (20 million pounds).

[fol. 1154]

Table I

Total Detergent Sales
for Dishwashing and Laundry
(Packaged and Bulk)

	Total Synthetics*		Soap**		Total Detergent Sales
	(MM #)	% of Total	(MM #)	% of Total	(MM #)
1948	400	12	3030	88	3430
1949	710	20	2850	80	3560
1950	1090	28	2860	72	3950
1951	1260	34	2410	66	3670
1952	1530	47	1760	53	3290
1953 (6 mos.) ..	900	55	750	45	1650
1953 (Est.)	1900	57	1450	43	3350

*—Solid and Liquid.

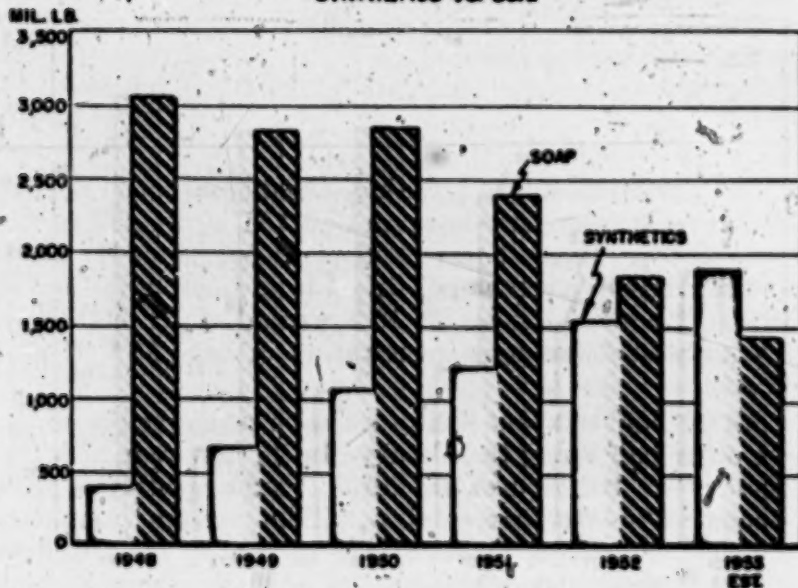
**—Includes: Bars (Toilet, Yellow and White), Granulated, Flakes and Chips, and Powders.

Source: Sales Census, Assoc. of American Soap & Glycerine Producers, Inc. Chemical and Engineering News, 9/1/52.

CHART I

TOTAL DETERGENT SALES

SYNTHETICS VS. SOAP



[fol. 1155]

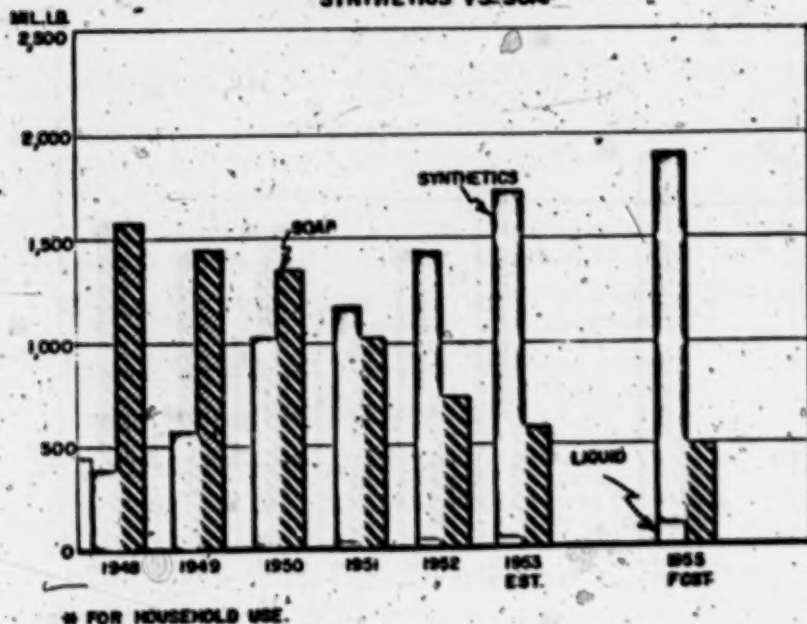
Table II A

Total Packaged Detergent Sales*
(Laundry and Dishwashing)

	Total Synthetic Detergents		Soap		Total Packaged Detergent Sales
	(MM #)	% of Total	(MM #)	% of Total	(MM #)
1948	380	20	1570	80	1950
1949	670	31	1460	69	2130
1950	1030	43	1350	57	2380
1951	1180	54	1020	46	2200
1952	1440	66	740 (Est)	34	2180 (Est)
1953 (6 mos.) ..	840	71	340 (Est)	29	1180 (Est)
1953 (Est.)	1730	75	570	25	2300

*—Packaged Sales denotes household use.

CHART II

PACKAGED^h DETERGENT SALES
SYNTHETICS VS. SOAP

[fol. 1156] In other words, retail sales of liquid synthetics in the first 6 months of this year equalled 80% of the total liquid synthetic retail sales in all of 1952. This performance does not include any sales activity of "Lux" since the Lever Brothers' product did not start national distribution until July.

These figures are reported by the Sales Census of the Association of American Soap and Glycerine Producers Inc. (a trade organization whose membership exceeds 80% of the entire industry) and are shown in Table II B.

Table II B

Breakdown of Packaged Synthetic Detergent Sales

	Liquid Synthetics*		Solid Synthetics		Total Sales of Synthetic Detergents
	(MM #)	% of Total	(MM #)	% of Total	(MM #)
1948	—	—	380	100.0	380
1949	2	3	668	99.7	670
1950	10	1.0	1020	99.0	1030
1951	23	1.9	1157	98.1	1180
1952	25	1.7	1415	98.3	1440
1953 (6 mos.)..	20	2.4	820	97.6	840
1953 (Est.)	50	2.9	1680	97.1	1730

*—Liquids converted to pounds on a basis of 8 pounds (16 fluid ounces per pound) to the gallon.

[fol. 1157] D. Brand Competition—Liquid Synthetics

Currently competing for the consumer's favor are five liquids whose product specifications are shown below:

Brand Name	Manufacturing Co. (Filling Loc.)	Class and Formula	% Concentrated	Type
"Joy"	Procter & Gamble (Cincinnati)	Not disclosed	Not disclosed	Not disclosed
"Glim"	B. T. Babbitt (not disclosed)	Ethylene oxide condensation of an alkyl phenol	83%	Nonionic
"Rol"	Fels & Company (not disclosed)	Not disclosed	Not disclosed	Anionic
"Lux"	Lever Brothers (contract fillers)	Not disclosed	Not disclosed	Anionic
"Chat"	Antara Chemicals Div. General Aniline (not disclosed)	Compounded for mechanical dishwashing	Not disclosed	Anionic

The lion's share of this market is held by "Joy", 80-85%, while "Glim" held second place prior to the introduction of Lever's "Lux". Both Lever and Fels seem to be pre-testing their products market by market.

"Lux" is apparently making great strides. According to recent information, the original sales goal, approximating 18 million 12-ounce cans and 6 million 22-ounce cans, in the first 12 months after introduction, is being greatly exceeded.

Available information suggests a 60:40 sales ratio favoring the 12-ounce versus the 22-ounce can. While it is yet too early to determine national consumer acceptance of the "Lux" product, the company (Lever Brothers) is filling the national pipeline and has plans under consideration for expanding capacity to meet expected demand.

At present, their product is being manufactured and packed in the East by Fluid Chemical Co. (Newark, N.J.) and in the Midwest by Stepan Chemical Co. (Chicago). The reason for employing outside manufacturers and packagers is the lack of producing and filling equipment by Lever Brothers.

[fol. 1158] The only canned product on the market "Lux" sells 12 fluid ounces for 39¢. The price is claimed to allow dealers a large mark-up, yet still enable them to sell at prices lower than competitors ("Joy" is 7 ounces for 29¢; "Glim," 6 ounces for 27¢).

Colgate-Palmolive, not an entrant as yet, is sitting back and watching. They admit having a product in readiness, one which can compete with "Joy" and "Lux", but they are awaiting the results of the "Joy-Lux" battle. If the results indicate an over-all increase in the use of liquids rather than a competitive realignment, Colgate and other manufacturers will probably enter the liquid market. Apparently, they are following the line of least resistance, letting Procter and Gamble and Lever educate the public to the use of liquid synthetics for dishwashing.

E. Prospects for Growth of Liquid Synthetics

The outlook for liquid synthetics is especially bright. Most of the companies have high hopes but because of the newness of the liquid product (it has been out since 1949, but only heavily promoted since mid-1951), they are treading cautiously.

One fact is certain. The consumer has taken to liquid synthetics, at least for the dishes. A recent Consumer Analysis (1953) of 17 markets across the country, presents the consumer preference picture for the use of cleansing agents for dishwashing. The results of this survey are shown in Table III following:

[fol. 1159]

Table III

Consumer Brand Preference for the Five Ranking Dishwashing Product Brands
(Rank)

Market	(1) Tide	(2) Joy	(3) Dreft	(4) Vel	(5) Ivory Bar
Portland, Me.	3	5	11	—	1
Washington, D.C.	1	2	5	6	3
Columbus, O.	1	2	4	8	6
Cincinnati, O.	1	2	3	6	15
Indianapolis, Ind.	1	3	2	5	—
Milwaukee, Wisc.	2	1	4	3	10
St. Paul, Minn.	2	3	1	5	7
Duluth-Superior, Minn.	1	4	8	6	3
Omaha, Neb.	2	1	4	3	—
Salt Lake City, Utah.	1	3	4	2	11
Seattle, Wash.	3	4	7	9	1
Long Beach, Calif.	1	2	4	3	9
Sacramento, Calif.	1	2	4	3	5
Fresno, Calif.	1	4	3	2	10
Modesto, Calif.	1	3	4	2	6
San Jose, Calif.	1	3	4	2	—
Honolulu, Hawaii	1	3	9	8	2

The table is interesting in many respects. Notice that of the five leading products used for dishwashing, the first four are synthetic detergents. Also interesting is the fact that "Joy", the newest product of the five (national distribution started in mid-1951), has reached second place in consumer preferences. It almost certainly indicates that the consumer is educated to the use of liquids, and now that another national brand has hit the market, increased usage will probably result.

One industry official has estimated that Liquids could ultimately reach as high as 6% of the packaged synthetics market (liquids now have 2.4% of all poundage sold), but that was prior to any evaluation of the national introduction of "Lux" liquid by Lever Brothers. Taking into account the acceptance of "Lux" and the extent of promotion and expansion programs scheduled for the product, this figure could easily exceed 5% by 1955 and continue to 10% with the entrance of new products and likely conversion of some present solid form synthetics to a liquid state.

[fol. 1160] This share of the market indicates a volume level of about 100 million pounds (12.5 million gallons computed at the rate of 128 fluid ounces to the gallon) in 1955, as shown in Table IV and Chart III. When the 10% level

is reached, the volume should approximate 200 million pounds (25 million gallons).

Table V indicates the can requirements necessary to package these forecasted liquid production figures, together with Continental's requirements at various levels of participation in the market.

Originally, three factors were believed to be limiting influences to the growth of liquid synthetics. They were:

- (1) the limited use for liquids; i.e., for dishes and fine fabrics,
- (2) the original sales appeal of liquids for use in hard-water areas,
- (3) the extent to which the manufacturers would be willing to promote the liquid so soon after the consumer's acceptance of powdered synthetics.

Point by point, in light of the recent developments in the liquid field, the importance of these factors was found to have been greatly overstated. Undoubtedly, the manufacturing companies would not have invested further in expensive manufacturing facilities and promotions if they felt that the liquid market was not a profitable one, or one of short-lived growth. Although "Joy" is estimated to have 80-85% of the market, "Lux" and "Rol" have become growing competitors, and Colgate has a product ready for introduction.

Because of its water-softening properties, liquids originally met with great success in the hard-water areas. Recent reports, however, indicate that the soft-water areas have also accepted liquids, a fact confirmed by data based on monthly grocery inventory surveys conducted by 12 newspapers in Boston, Winston-Salem, Cincinnati and Indianapolis. The sales in soft-water areas have been quite notable, suggesting that detergents sell equally well in both soft- and hard-water areas, given equal merchandising attention.

[fol. 1161]

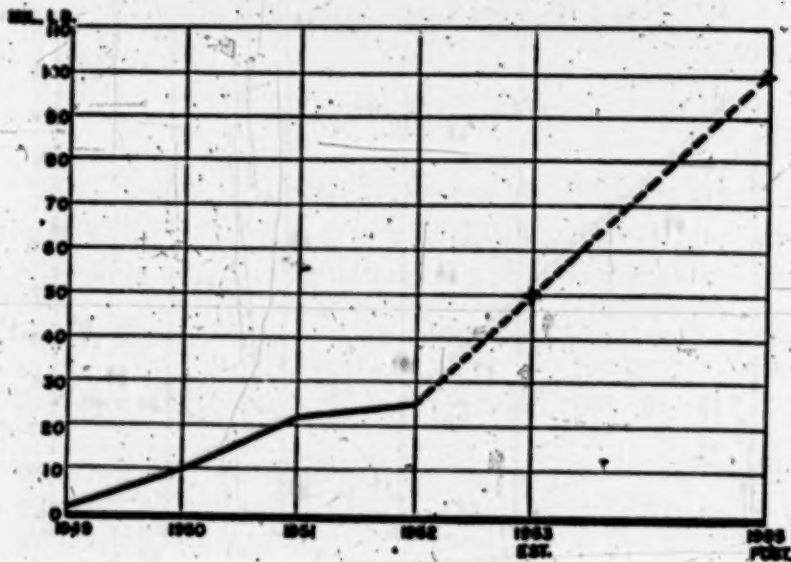
Derivation of the Packaged Liquid Synthetic Detergent Demand

	Population (Excluding Armed Forces Overseas)	Per Capita Packaged Detergent* Consumption	Packaged Detergent Market	Synthetic Detergent Portion	Total Synthetic Market	Liquid Share	Liquids as % of Tot. Synthetics
	(MM)	(lbs.)	(MM lbs.)	(%)	(MM lbs.)	(MM lbs.)	
1952	153	14.2	2180	66	1440	25	1.7
1953 (Est.)	155	14.8	2300	75	1730	(3.1 mm gals.) 50	2.9
1955 (Est.)	160	15.0	2400	80	1900	(6.5 mm gals.) 100 (12.5 mm gals.)	5.3

*—Includes soap and synthetic detergents.

CHART III

PACKAGED LIQUID SYNTHETIC DETERGENT SALES



[fol. 1162]

Table V

Can Requirements for Liquid Synthetic Detergents

	Liquids as % of Packaged Syndet Market	Total Number of Gallons* (millions)	Equivalent Number of 12 oz. Cans (millions)	Continental Requirements at Percent Participation		
				25%	50%	50%
				(millions)	(millions)	(millions)
1953	3	6.5	69	17	28	35
1955	5	12.5	133	33	53	67
?	10	25.0	267	67	107	134

* Liquids converted to gallons on a basis of 8 pounds (128 fl. ounces) to the gallon.

[fol. 1163] Liquids are being pushed by heavy advertising campaigns. Procter and Gamble spent almost \$2 million on "Joy" in 1952, securing 80-85% of the \$17 million packaged liquid market, or about 14¢ per sales dollar. In the first 5 months of this year, the expenditure has exceeded \$1.3 million. Lever Brothers, attempting to capture 25% of this market, has appropriated over \$1 million for this year. "Glim", the B. T. Babbitt product, has increased its expenditure from \$70,000 in 1952 to \$93,000 in the first 5 months of 1953. Thus, it appears that in addition to a fierce com-

petitive battle developing, leading manufacturers such as Procter and Gamble and Lever, are quite willing to promote this new entry, liquid synthetics, and to develop this market in direct competition with their established brands of powdered detergents.

[fol. 1164]

II. The Metal Package

A. Technical Specifications of the Can

Until "Lux" was introduced in a metal can liquid synthetics were marketed in glass containers because at liquid's inception no satisfactory can lining had been found which would resist the chemically-active liquid synthetic detergents. Extensive and elaborate tests were conducted to determine the best packaging material and glass won out, probably by default.

With its metal-packed detergent, Lever can radically alter liquid detergent selling. The units containing the fluid, when submitted to our Research Department last July, were found to have the following specifications:

Can size: 211 x 508 over the double seams

Capacity: 15-16 fluid ounces

Blackplate can with cemented side seam

Base Coat (Body & Bottom)—Phenolic

Top Coat (Body & Bottom)—Vinyl

Can size: 316 x 650 over the double seams

Capacity: 1 pint 6 fluid ounces

Blackplate can with cemented side seam

Base Coat (Body & Bottom)—Phenolic

Top Coat (Body & Bottom)—Vinyl

The cans have a dripless metal spout crimped to a slightly domed top.

Despite the fact that the can had been developed through the joint efforts of American Can and Lever Brothers, neither company is entirely satisfied with it, and both companies are working on improvements. Reportedly Lever accepted the can only to facilitate getting their product on the market.

[fol. 1165] B. Glass versus Metal

Of the two materials, glass and metal, the can appears to offer numerous advantages. For the manufacturer, the all-around lithography results in a brilliantly colored display package while the can itself acts as the primary package. The glass container, on the other hand, is further packaged in a cardboard folding carton for additional protection. Non-breakability of the can reduces loss and waste at the filling machines, and while in transit. In the stores, it can be stocked compactly and securely, offering a colorful counter or shelf display. The retailer derives additional benefit through elimination of loss due to breakage.

Non-breakability is a vital consideration for the housewife who must frequently handle the package with wet, slippery hands. The dripless spout prevents the liquid from dripping down the sides of the can when being poured, eliminating, in some measure, one of the causes of slipperiness. Also, of course, the can will not become wet and buckle, as do cardboard packaged flakes and powders, and it occupies relatively little shelf space.

The disadvantages of the can are apparent, but are generally not of critical importance compared with the breakability problem with glass. When wet, the can is almost as slippery as the glass container; the liquid product is not immediately visible; the base of the can is prone to rust when in contact with wet surfaces (aluminum or aluminum coated bottoms should eliminate the rust ring); and prolonged shelf life will probably result in corrosion particles through interreaction of the detergent and metal.

C. Prospects for the Metal Can

At this time, the outlook for metal packed liquid synthetic detergents appears to be promising. As stated earlier, glass became the first container material because can linings were found to be unsatisfactory. Research has solved this problem, however, and a canned product is now already on the market.

[fol. 1166] Lever Brothers has conducted a consumer survey designed to measure the consumer preferences of container materials for their liquid product. The results indicated a significant preference for metal. Couple this with

the report that Procter and Gamble is willing to modify the formulation of "Joy" so as to be a more compatible product and it becomes conceivable (and probable) that virtually all liquid synthetics will be packed in metal cans. The fact that Colgate (who now is taking the "wait-and-see" attitude) had been discussing their product with several can companies gives added impetus to the trend toward metal cans.

The market for synthetic detergents, both solid and liquid, has been captured by the large soap companies because they already possessed the marketing machinery and promotional know-how for the distribution of such products and because synthetics would have eventually forced these soap companies to relinquish the major portion of their sales—soap for household use—to this new product. Historically, these three companies, Procter and Gamble, Lever and Colgate, have captured over 90% of the sales of household synthetic detergents. Because of this dominance the merchandising plans of the rest of the industry would follow the "Big Three".

D. Competition

American Can is out in front as the supplier of liquid detergent cans. Their can is being used by Lever Brothers. But the fact that they already have a can on the market does not necessarily make them the established leaders in the field. Each liquid brand, with separate and specific formulations requires special enamels and poses numerous problems. In a sense, every new manufacturer requires the redesigning, retesting and redeveloping of a liquid detergent [fol. 1167] can. For this reason, among others, no one can company could hold the entire market. The opportunities are excellent for Continental despite the initiative that American Can has gained, but no time should be lost in making a strong bid for a share of this rapidly developing market.

[fol. 1168] III. Technical Notes on the Nature of Liquid Synthetic Detergents

A detergent is any chemical material which has cleansing properties—the oldest being soap, the newest, synthetics! Synthetic detergents have been defined by the U. S. Bureau

of Standards as non-soap cleansing agents produced by organic synthesis. They take the usual forms of soap—bar, granule, flake, powder and liquid.

Although the number of synthetic detergents is legion, retail sales of household detergents are restricted almost 100% to two basic types, the alkyl aryl sodium sulfonates and the alcohol, or alkyl, sulfates.

Alkyl aryl sodium sulfonate is derived from either coal tar or petroleum sources, with benzene being the most important raw material from an economic viewpoint. The manufacture involves three steps:

- (1) the chlorination of a kersene fraction;
- (2) the condensation of alkyl chloride with benzene or toluene, and
- (3) the sulfonation of the alkyl aryl compound. (The third step may be carried out either by the manufacturer of the alkyl aryl or by the soap companies that complete and distribute the product.) At the final step, alkyl aryl sulfonate is mixed with builders to give the degree of detergency desired.

Alcohol sulfate (technical nomenclature, "alkyl sulfate") is a sulfated derivation of a fatty alcohol. Its manufacture depends on:

- (1) High pressure hydrogenation of fatty acids (stearic, oleic, palmitic and lauric) to form fatty alcohols, with chromium oxide or copper oxide acting as the catalyst; or

- (2) Sodium reduction.

The alcohol is sulfated by either a batch or continuous process. The finished product for retail distribution is usually manufactured as a 30-35% active base, with sodium sulfate added as a builder, or as a 20% active base with sodium sulfate and sodium tripolyphosphate plus other materials as builders.

[fol. 1169] Synthetic detergents constitute three classes depending on whether the active ingredient is electrically charged positively, negatively, or is neutral. The three classes are technically designated as cationic, anionic and nonionic, respectively. The anionics, constitute by far the

largest volume. They contain practically all the important retail products and the major portion of the industrial products.

Because synthetics have special built-in properties and are made of different ingredients and by different processes, they do not have the natural drawbacks of soap. Syndets (synthetic detergents) have one property that make them highly desirable for use with hard water. Their calcium and magnesium salts are soluble, therefore, their use will not form scum or curds, leaving a grease ring around the dishpan, nor will any dulling films adhere to the material being washed. Synthetics also have the greater quality of reducing surface tension, thus allowing water to penetrate fabrics more quickly and thoroughly. They disperse and suspend dirt particles, and emulsify oil and grease, thus requiring less rinsing.

They are individually formulated to clean textiles, metals, and many other industrial materials; other "specially tailored" syndets are available for home use solely in washing machines or as wall and floor cleansers.

To the housewife, synthetics have three advantages over soap; time-saving in washing and rinsing, no soap film means no dulling of washable colors; and the sudsing action is built into the synthetic, the rate of which is dependent upon the desires of the manufacturer and the consumer.

The above qualities and advantages apply equally well to both solid and liquid synthetics; but liquids have certain advantages over the solids:

[fol. 1170] (1) there are no granules which can tear or injure the fabric,

(2) they do not contain strong alkalis, hence are milder and more readily applicable to fine laundering,

(3) they are more readily soluble,

(4) they are not "dusty", and

(5) they are easy to use.

But all is not milk and honey with synthetic detergents. Most synthetics have a much stronger defatting effect than does soap. These synthetics deplete the natural oils of the skin, causing in some some instances, "dishpan hands". They also extract the lubricating oils from washing machine bearings which come in contact with them.

These disadvantages in one way may, of course, become advantages in other ways. To some extent, correction of disadvantages lies in selecting the appropriate type of detergent for each use. To date, the advantages of synthetic detergents outweigh the disadvantages, enough to increase the market for synthetics at a rapid rate, whereas the soap market has been steadily declining.

From the manufacturer's point of view, the relative stability of raw material prices gives added impetus to the promotion of synthetics. Tallow, the basic raw material for soap, has fluctuated between 5 and 18 cents per pound for the past few years. In the meantime, sodium alkyl aryl sulfonate, the principal raw material for synthetics, has been consistently between 13 and 15 cents per pound. Such price stability is a real advantage, and one that is in addition to the natural chemical edge which synthetics have over soap.

[fol. 1171] GOVERNMENT'S EXHIBIT 434

June 4, 1947

Comparative Costs

Single Trip Versus Returnable Beer Containers • Year 1943

Reprinted From "American Brewer"

The "American Brewer" magazine recently completed a series of articles which compared packaging and delivery costs between various types of beer containers. The articles were based on a report dated June 20, 1944 prepared by Stevenson, Jordan and Harrison, Inc. for the Glass Container Association and covered data assembled during the year 1943.

The report endeavored to establish the variation in packaging and delivery costs or the cost differentials for a number of different styles of beer containers. It did not attempt to calculate the complete cost of a case of beer. No selling or administrative cost or profit figures were included. Neither were any tax allowances made.

The cost data included an arbitrary figure for the beer in each package, plus the cost of the cans or bottles, labels,

crowns, cases, direct and indirect labor, overhead, and wholesaler or distributor and retail delivery costs.

The survey included six breweries, two in the East, three in the Middle West and one in the West. It also included nine distributors, three in the East, three in the Middle West, and three in the West. Large and small breweries and distributors were included.

Actual cost and time studies were made on 12 and 32 ounce export and steinie bottles; one-trip bottle costs were estimated by adjusting the army overseas pack costs; can costs were estimated based on available records from past can operations.

Returnable bottles were estimated to make 18.3 trips, wood cases—25 trips and returnable cartons—10 trips.

Drivers' wholesale and retail delivery times were determined by time studies.

[fol. 1172] The beer cost was fixed for all 12 ounce and 32 ounce containers and was calculated on a beer cost of \$2.75 per barrel less 2 percent loss and one barrel was estimated to yield 13.50 cases of 12 ounce containers to cost \$.2037 per case and 10.13 cases of 32 ounce containers to cost \$.2715 per case. These figures were employed throughout the study for the beer cost regardless of type of container.

The following prices for bottles and cans were used for all breweries:

	Per Gross	Per Thousand	Per Case
12 oz. Export Bottles.....	\$2.90	\$20.14	\$ 4834
12 oz. Steinie Bottles.....	2.60	18.06	4334
12 oz. Single-trip Bottles and Cartons.....	2.35	16.32	3917
12 oz. Cone-top Cans and Cartons.....	3.49	24.24	5818
12 oz. Flat-top Cans and Cartons.....	3.43	23.85	5724
32 oz. Returnable Bottles.....	4.65	32.29	3875

Hourly labor rates in the breweries ranged from \$.92½ to \$1.27 per hour plus payroll taxes. In warehouses they ranged from \$.67 to \$1.04 per hour. On delivery trucks drivers ranged from \$.72 to \$1.70 and helpers \$.57 to \$1.21 per hour.

Below we are summarizing briefly the information appearing in the articles:

- (1) The high original cost of the single-trip package is emphasized—both for the cans and the one-trip bottle—as against the returnable bottle.

- (2) The articles indicate the extent to which the economies derived through use of single-trip packages tend to offset a portion of their higher original cost.
 - (3) Labor man hours required in the brewery packaging operations were estimated as being reduced by $\frac{1}{3}$ when 12 ounce flat top cans were used as against an equal quantity of returnable or single-trip bottles.
 - (4) Higher overhead costs per case were indicated for the returnable bottle as against either the one-trip bottle or the flat top can.
- [fol. 1173] (5) The following summary^d was made of the cost per case of beer packaged in various packages.

Cost Per Case of Beer at the Brewery When Packed in the Following Style of Packages

	Average Cost per Case
12 oz. Steinie—Wood Case.....	\$ 4402
12 oz. Steinie—Returnable Carton.....	4342
12 oz. Export—Wood Case.....	4593
12 oz. Export—Returnable Carton.....	4577
12 oz. Single-Trip Bottle—Carton.....	7647
12 oz. Flat Top Can—Carton.....	8812
12 oz. Cone Top Can—Carton.....	9068
32 oz.—Wood Case.....	5055
32 oz.—Returnable Carton.....	5050

- (6) The articles indicate that the use of cans makes possible a 33 to 39 percent reduction in delivery time when making wholesale truck deliveries as compared to the returnable bottle.
- (7) A 22 to 27 percent time saving in retail delivery time is effected through use of the can over the returnable bottle.
The average saving in wholesale and retail deliveries in cents per case through use of the non-returnable packages over returnable packages was estimated at 4.66 cents per case.
- (8) It was estimated it costs a retail store from 2.9 to 6.4 cents to handle each case of empties.
- (9) The articles indicated that the increased 12 ounce flat top and 12 ounce cone top can cost differentials

over the 12 ounce single-trip bottle; the 12 ounce steinie bottle in a returnable carton; the 12 ounce steinie bottle in a returnable wood case or the 12 ounce export bottle in a returnable wood case, delivered at the following shipping destinations, were as follows:

Increased Delivered Cost Differentials of the 12 Oz. Flat Top Can Over Competing Beer Packages

Type of Beer Package	Local Del. by Brewery	New York City to:				
		Hartford 108 Mi.	Boston 229 Mi.	Buffalo 396 Mi.	Cleveland 580 Mi.	Chicago 907 Mi.
Single-Trip Bottle.....	.117	.104	.100	.096	.092	.084
Steinie Bottle						
Returnable Carton.	.416	.349	.333	.317	.302	.271
Export Bottle						
Wood Case.....	.391	.292	.265	.239	.216	.166

[fol. 1174] Increased Delivered Cost Differentials of the 12 Oz. Cone Top Can Over Competing Beer Packages

Type of Beer Package	Local Del. by Brewery	New York City to:				
		Hartford 108 Mi.	Boston 229 Mi.	Buffalo 396 Mi.	Cleveland 580 Mi.	Chicago 907 Mi.
Single-Trip Bottle.....	.142	.131	.128	.124	.121	.115
Steinie Bottle						
Returnable Carton.	.442	.376	.361	.345	.331	.302
Export Bottle						
Wood Case.....	.417	.319	.293	.268	.245	.196

- (10) The articles point out that all the savings which might accrue through use of single-trip containers have not as yet been determined. It emphasizes their popularity and expresses the opinion that a cost differential of approximately 25 cents per case against the cans could be absorbed due to savings incurred through use of a single-trip container.

In abstracting and preparing the series of articles from the original report they were greatly expanded. This did

Note: The figures shown are based on the 1943 survey. Since that time freight, labor, package and other costs have increased. The differential against the can has increased due to a greater proportionate increase in can prices.

not make for brevity and to a degree makes it difficult to absorb their contents.

In order to save time we have grouped the various articles according to the subject covered and if they are read in the order indicated, we believe you will be able to secure a good knowledge of the operations involved and also the cost, by operation, of packaging beer.

Subject and Articles

Beer, Container, Label, Crown and Case Costs at Brewery

See Article—"How Crowns, Labels and Cases Affect Total Packaging Costs"

Packaging Labor Costs and Labor Man Hours per Case of Beer at Brewery

See Articles—"Why and Where Packaging Costs Vary"

—"How Man Hours Affects Packaging Costs"

—"Man Power—The Key to Bottling Costs"

—"The Effect of Wages on Brewery Packaging Costs"

[fol. 1175] Packaging Overhead Expense

See Article—"Overhead—How It Affects the Cost of Beer"

Summary of Packaging Cost at Brewery

See Article—"Why Beer Packaging Costs Can Be Further Lowered"

Warehousing and Delivery Costs for Each Style Container

While there are many variations in methods employed to deliver beer from the brewery three principal ones are used.

- (1) Retail deliveries direct from brewery
- (2) Wholesale deliveries to local branches, with empties returned to brewery by the retail delivery trucks.
- (3) Wholesale deliveries to branches or distributors where full cases or empty cases must be warehoused.

These costs are analyzed in the three following articles:

- (1) "Transportation Costs in the Wholesale Distribution of Beer" (or from Brewer to Wholesale Distributor)
- (2) "Transportation Costs in the Retail Distribution of Beer" (or from Wholesale Distributor to Retailer)
- (3) "How Delivery and Warehousing Affect Total Cost of Beer Distribution."

Effect of Shipping Distance on Cost of Delivering Beer in Various Styles of Packages

A comparison was made in three articles of the shipping and delivery problem and costs as presented (1) by the varying shipping weights of the different style containers and (2) by container returns.

The articles also indicated the difference in cost between the various packages, when shipped to destinations at varying distances from the brewery.

The three articles are as follow:

"Effect of Package on Competitive Position of Large Brewing Centers"

"Analysis of Delivery Costs Shows Wide Variation in Distribution Methods"

"How Costs Were Determined in Analysis of Beer Packaging and Delivery"

[fol. 1176] Savings in Retail Stores Through Use of Non-Returnable Containers

See Article—"Analyzing the Advantages of the Single-trip Container"

As stated before the figures represent conditions in 1943 and in order to have a more up-to-date comparison, we will endeavor to adjust the figures for the increased container costs, labor expense and added freight charges and send you this data at a later date. Any figures sent would only be approximate as this is the best we will be able to do with the data available.

The articles represent a rather interesting packaging study and while they indicate the cans cost more than other

styles of containers, the differentials are not as large as are frequently reported. The articles also emphasize where the can saves money.

In view of the fact the information is not current, discretion will have to be exercised in its use.

G. H. Muth

GHM:em

#43—Head Office
Mr. T. C. Fogarty

June 10, 1947.

**Comparative Cost Differentials for Beer Packages
Glass Bottles vs. Metal Cans**

We have reviewed the Stevenson, Jordan & Harrison survey on beer packaging dated June 20, 1944. This was prepared for the Glass Container Association and reported certain beer packaging and distribution costs for the year 1943. The figures as shown in the report indicated the extra cost differential incurred through the use of cans as against various styles of bottles, when both were employed for local delivery and to points up to 907 miles from a brewery, using New York as the point of origin.

The report also endeavored to establish the variation in packaging and delivery costs or the cost differentials for a number of different styles of beer containers. It did not attempt to calculate the complete cost of a case of beer. No selling or administrative cost or profit figures were included. Neither were any tax allowances made.

The cost data included an arbitrary figure for the beer in each package, plus the cost of the cans or bottles, labels, crowns, cases, direct and indirect labor, overhead, and wholesaler or distributor and retail delivery costs.

The survey included six breweries, two in the East, three in the Middle West and one in the West. It also included nine distributors, three in the East, three in the Middle West, and three in the West. Large and small breweries and distributors were included.

The entire report is covered in a special abstract dated June 4 compiled by this department. We have, in addition, prepared the following data from the report and which we believe will give you the most important comparative figures between cans and bottles.

Table No. 1

This table indicates the cost of beer in the various styles of packages when delivered either locally by the brewer or distributor or as far as Chicago—907 miles from New York.

On this table we show the 1943 reported cost and have added figures to adjust for estimated 1947 increased package cost, labor (plus 30%) and freight cost.

Table No. 2

This table indicates the cost advantage of one style of bottle over other styles of bottles also over metal cans.

[fol. 1178] Table No. 3

This table indicates the increased cost differential of the 12 ounce flat top and 12 ounce cone top cans over the various types of bottles, when both style containers are used either for local delivery or for delivery 307 miles from New York.

Table No. 4

Miss Lynch has also prepared a chart which gives a visual picture of the delivered cost spreads between the various styles of containers.

It must be kept in mind all figures indicate only approximate packaging differentials.

Bottle and Can Cost Per Case and Per Trip

Below is a comparison of the per case and per trip cost of bottles and cans as between 1943 and 1947. Returnable bottles are estimated to make 18.3 trips and returnable cartons—10 trips.

	1943		1947		
	Per Case	Per Trip	Per Case	Per Trip	
12 oz. Export Bottle—	4834	.0267	6715	.0367	
Add—Returnable Cartons	2250	.0225	2250	.0225	
		.0492		.0591	(.0792)
12 oz. Steinie Bottle—	4334	.0237	6031	.0330	
Add—Returnable Cartons	2530	.0253	2530	.0253	
		.0490		.0583	(.0783)
12 oz. Single Trip Bottle and Cartons	3917	.3917	4560	.4560	
	.....	.....	4320	.4320	
12 oz. Cone Top Can and Cartons	5818	.5818	68948	.68948	
12 oz. Flat Top Can and Cartons	5724	.5724	66148	.66148	

[fol. 1179] Note: Bottle costs are delivered; can costs shown are f.o.b. can factory and we have added 3 cents per case freight to build up delivered prices in other tables in this report.

Two prices are shown for single trip bottles—one for the 7 3/8 ounce and the other for the new 6 1/2 ounce.

1947—returnable carton prices are low and we have estimated the per trip cost should be increased by approximately 2 cents.

Cost For Case of Filled Beer at the Brewery

The cost of a filled case of beer at the brewery—using only the packaging costs, plus labor and overhead, and adding an arbitrary beer cost figure of 20.37 cents for each case of 24/12 ounce and 27.15 cents for each case of 12/32 ounce containers was estimated to be as shown below. The 1943 figures are from the report and the 1947 figures were estimated.

Type of Package	1943 Cost per Case	1947 Estimated Cost per Case
12 oz. Steinie—wood case.....	4402	4827
12 oz. Steinie—returnable carton.....	4342	4749
12 oz. Export—wood case.....	4593	5071
12 oz. Export—returnable carton.....	4577	5067
32 oz. Quart—wood case.....	5055	5554
32 oz. Quart—returnable carton.....	5050	5541
12 oz. Single Trip Bottle—carton.....	7647	83412
12 oz. Flat Top Can—carton.....	8812	1.0227
12 oz. Cone Top Can—carton.....	9068	1.0614

The can cost differential increased during 1947 over 1943, due to the greater proportional can and can carton price rise. Due to the 16.3 trippage estimated for bottles any increase in returnable bottle cost shows up only as a very small added amount. The same applies to returnable wood cases which are estimated to make 25 trips and returnable cartons—estimated to make 10 trips. In comparing the figures we believe approximately 2 cents per case should be added to the 1947 returnable bottle case costs, as our costs are low.

[fol. 1180] The can and can carton costs were increased over the 1943 report figures by approximately 10.532 cents per case of 24/12 ounce cone top cans and 8.908 cents per

case of 12 ounce flat top cans. Three cents per case was added for freight on cans from factories to brewery as this figure was omitted in the original report. Other figures which we have indicate can and can carton cost increases per case from 1941 to 1947 for the 12 ounce cone top can were 10.154 cents and for the flat top can—9.754 cents per case.

We do not believe that, up to the present time, the cost savings and conveniences which result from use of a one trip can have been fully determined. We do know there is a decided demand for non-returnable packages and this situation may influence the industry to accept smaller profit margins in order to meet consumer preferences.

The ultimate consumer, we believe, may possibly pay 1 cent more for a 12 ounce can than for the 12 ounce bottle of beer. However, we question if they will pay a larger amount. Any further difference will probably have to be contributed by the brewer, distributor or retailer.

This article gives a reasonably complete picture of the cost of packaging beer in cans and bottles and indicates the form of procedure that might be followed if up-to-date and more accurate data is desired.

G. H. Muth.

GHM:em

cc: Messrs. F. W. Rosenbauer—#43
P. P. Wojtul—#43

P.S. We suggest the abstract dated June 4 be also read, as it is a more inclusive report.

G.H.M.

August 7, 1947.

Comparative-Delivered Costs

12 Oz. Non-Returnable Beer Bottle

-vs.

12 Oz. Flat Top and Cap Sealed Beer Cans

Estimated Delivered Cost to Brewer in Eastern Area of 12 Ounce Light Weight Non-Returnable Bottles vs. 12 Ounce Cans—Flat Top and Cap Sealed—Case of 24 each.

12 Ounce—Non-Returnable Bottle—Light Weight—6½ Oz.—Cost per Case	
Delivered Cost to Brewer (Eastern Area) including Cartons \$2.60 per Gross	
Cost per case of 24, including carton.....	\$.4320
Add—cost of labels.....	.0113
Add—cost of applying labels.....	.0044
	<hr/>
Add—cost of spotted crowns.....	.4477
	<hr/>
Total Cost per Case—24 Bottles.....	\$.4843

12 Ounce Cans—Cost per Case

Jersey City Basis

Cans—Flat Top and Cap Sealed	Flat Top at \$24.09 per M	Cap Sealed at \$24.84 per M
Cost per case of 24 cans—no cartons.....	\$.57816	\$.59616
Cartons at \$80.25 + 6.50 setup charge.....	.08675	
Cartons at \$84.25 + 6.50 setup charge.....		.09075
	<hr/>	<hr/>
Cost per case of cans f.o.b. our factory.....	.66491	.68691
Est. Div'd Freight—Case 24 cans—.50 per cwt.....	.02550	.02550
	<hr/>	<hr/>
Est. Delivered Cost of Cans—Case.....	.69041	.71241
Est. Delivered Cost of Bottles—Case.....	.48430	.44770
	<hr/>	<hr/>
Extra Cost per Case—Cans over Bottles.....	.20611	.26471

Note.—Cost of crowns has been added to bottle cost when compared to Flat Top cans and omitted when compared to Cap Sealed cans as cap cost would be the same on cap sealed cans and bottles.

[fol. 1182]

—The freight charge added to make up the delivered can cost would vary, in any comparison made, with the shipping distance. The 50 cent per cwt. figure shown represents the current freight rate from Jersey City to Boston or approximately 229 miles. This charge of .0255 cents per case, could be adjusted for shorter distance deliveries.

Estimated Shipping Weights per Case

	Empty	Filled
24—12 Oz. Flat Top—Cans.....	5.09#	24.50#
24—12 Oz. Cap Sealed—Cans.....	5.69	25.00
24—12 Oz. Non-Returnable—Bottles.....	11.66	29.66

GHM:em

G. H. Muth, Commercial Research Dept.

[fol. 1183]

GOVERNMENT'S EXHIBIT 438

Continental Can Company, Inc.
100 East 42nd Street
New York 17, N. Y.

June 30, 1949.

To: All District Sales Managers

Subject: One-Way Single Trip Beer Bottle Prices
GB-6 Style—6½ oz. weight
GB-8 Style—8 oz. weight

The attached subject information compares the new one-way beer bottle prices with those previously in effect for both the GB-6 and GB-8 style containers. We have also indicated descriptive information concerning the various types of carriers, and have given an example showing the cost to the brewer of each bottle style packed in Alpak Carriers.

Concerning these price reductions, the glass company claims their volume on one-way beer bottles is picking up, and the increased activity justifies doing all that is possible to create an even larger demand for this package. With this regard, glass container salesmen are requested to urge their customers to apply at least a portion of these savings from lower packaged prices towards advertising and merchandising the one-way glass beer bottle.

Actually, non-returnable beer bottle shipments during the first four months of this year are lagging approximately 1.5 million units or 1.2% behind the same period last year. This price reduction may, therefore, be regarded as a further attempt on the part of the glass manufacturers to maintain their position in the one-way package field.

Commercial Research Department.

ALW:MGG

cc: Messrs. T. C. Fogarty, R. L. Perin, P. P. Wojtul, G. H. Muth, P. E. Fagan, W. M. Cameron, W. P. Murray, O. G. Jakob, J. F. Fenn, P. B. Nold, R. S. Hatfield, G. C. Schepp.

[fol. 1184]

GOVERNMENT'S EXHIBIT 439

Continental Can Company, Inc.
100 East 42nd Street
New York 17, N. Y.

July 11, 1949.

To: All District Sales Managers

Subject: Comparative Cost—12 Oz. Non-Returnable Bottles vs. 12 Oz. Cans

The attached sheets of comparative cost data should be helpful to your salesmen who are actually contacting Breweries, and is based on information gathered by this Department and assembled by the Commercial Research Department.

/s./ M. M. Dukehart, Jr.

MMD:aws

CC: Messrs. T. C. Fogarty, F. A. Whittall, H. A. Rapelye, R. L. Perin, F. H. Dillingham, P. P. Wojtul, G. H. Muth, P. E. Fagan, W. M. Cameron, W. P. Murray, O. G. Jakob, J. F. Fenn, P. B. Nold, R. S. Hatfield

7/18—as requested by G. H. Muth

CC: W. M. Tomkins #78, P. E. Pearson #42, A. M. Cameron #6, R. V. Wilson #85, W. J. Mutschler #85, J. S. Snelham #43, Greg Barry #43, S. McKewen.

[fol. 1185] Comparative Cost Data—Cans Over
Bottles

12 Oz. Flat Top Beer Cans
12 Oz. Cap Sealed Beer Cans
12 Oz. GB-6 Non-Returnable Bottles
12 Oz. GB-8 Non-Returnable Bottles
(Cases of 24 and per M)

(1)

Comparative Cost per M

	12 Oz. Flat Top	12 Oz. GB-6	12 Oz. GB-8	Cans over Bottles	
				GB-6	GB-8
Chicago.....	\$33.128	\$24.125	\$26.208	\$ 9.003	\$ 6.920
Jersey City.....	33.228	24.125	26.208	9.103	7.020
	12 Oz. Cone Top	12 Oz. GB-6	12 Oz. GB-8	Cans over Bottles	
				GB-6	GB-8
Chicago.....	\$35.771	\$24.125	\$26.208	\$11.646	9.563
Jersey City.....	36.171	24.125	26.208	12.046	9.963

(2)

Comparative Cost per Case of 24's

	12 Oz. Flat Top	12 Oz. GB-6	12 Oz. GB-8	Cans over Bottles	
				GB-6	GB-8
Chicago.....	\$0.7951	\$0.5790	\$0.629	\$0.2161	\$0.1661
Jersey City.....	.7975	.5790	.629	.2185	.1685
	12 Oz. Cone Top	12 Oz. GB-6	12 Oz. GB-8	Cans over Bottles	
				GB-6	GB-8
Chicago.....	\$0.8585	\$0.5790	\$0.629	\$0.2795	\$0.2295
Jersey City.....	.8681	.5790	.629	.2891	.2391

[fol. 1186]

Comparative Cost Data
Including—Containers—Labels
—Crowns
—Freight

	Cost Per Case of 24		Cost Per 1000	
	12 oz. Style GB-6 \$3.15 Per Gr.	12 oz. Style GB-8 \$3.45 Per Gr.	per case cost x 41.6667 Style GB-6 \$3.15 Per Gr.	per case cost x 41.6667 Style GB-8 \$3.45 Per Gr.
12 Oz. Non-Ret. Bottles— 24 per case				
Cost—case of 24—includes carton.....	.5250	.5750		
Add—cost of labels.....	.0113	.0113		
Add—cost of applying labels.....	.0044	.0044		
	<u>.5407</u>	<u>.5907</u>		
Add—cost of spotted crowns at 24¢ gr.....	.0383	.0883		
Total—cost per case of 24....	<u>.5790</u>	<u>.6290</u>	24.125 per M	26.208 per M
12 Oz. Cans—24 per case— Chicago	12 oz. Flat Top at 28.67 per M	12 oz. Cap Sealed at 28.55 per M	12 oz. Flat Top \$28.67 per M	12 oz. Cap Sealed \$29.55 per M
Cost—case of 24—no carton.....	.68808	.70920		
Cartons—\$75 per M—\$6.50 set up charge.....	.08150			
Cartons—\$79 per M—\$6.50 set up charge.....		.08550		
	<u>.76958</u>	<u>.79470</u>		
Add—cost of spotted crowns at 23¢ gross.....		.03830		
(1) Freight at 50¢ cwt to Brewery..	.02550	.02550		
Total—cost per case of 24....	<u>.79508</u>	<u>.85850</u>	33.128 per M	35.771 per M
12 oz. Cans—24 per case— Jersey City	12 oz. Flat Top at \$28.77 per M	12 oz. Cap Sealed at \$29.95 per M	12 oz. Flat Top \$28.77 per M	12 oz. Cap Sealed \$29.95 per M
Cost—case of 24—no carton.....	.69048	.71880		
Cartons—\$75 per M—\$6.50 set up charge.....	.08150			
Cartons—\$79 per M—\$6.50 set up charge.....		.08550		
	<u>.77198</u>	<u>.80430</u>		
Add—cost of spotted crowns at 23¢ gr.....		.03830		
(1) Freight at 50¢ cwt. to Brewery..	.02550	.02550		
Total—cost per case of 24....	<u>.79748</u>	<u>.86810</u>	33.228 per M	36.171 per M

(1) Average figure—rates vary by location of brewery.

Commercial Research Dept.

June 23, 1949.

[fol. 1187]

Comparative Costs

12 Oz. GB-6 Non-Returnable Bottles
 12 Oz. GB-8 Non-Returnable Bottles
 12 Oz. Flat Top Beer Cans
 12 Oz. Cap Sealed Beer Cans

(Cases of 24 and per M)

Type of Container	Summary	
	Total Cost to Brewery (Including average freight, cartons, crowns, etc.)	
	Case of 24's	Per 1000
12 oz. Style GB-6 Non. Ret. Bottle.....	5790	24.125
12 oz. Style GB-8 Non P. Bottle.....	6290	26.208
12 oz. Flat Top Cans—C. ....go Basis.....	79508	33.128
12 oz. Flat Top Cans—Jersey City Basis.....	79748	33.228
12 oz. Cap Sealed Cans—Chicago Basis.....	85850	35.771
12 oz. Cap Sealed Cans—Jersey City Basis....	86810	36.171

Non-Returnable Bottle Prices:

	Style GB-6	Style GB-8
Prices effective August, 1948.....	\$3.20 per Gr.	\$3.70 per Gr.
Prices effective June 1, 1949.....	\$3.15 per Gr.	\$3.45 per Gr.
Price Reduction.....	.05 per Gr.	.25 per Gr.

Commercial Research Dept.

June 23, 1949.

[fol. 1188]

GOVERNMENT'S EXHIBIT 440

Continental Can Company, Inc.
 Inter-Company Memorandum

To: Location #43—Head Office
 Attention: Mr. M. M. Dukehart
 From: Location #43—Head Office
 Date: October 31, 1952
 Subject: Beer Packages Smaller Than 12 Ounces

The attached report, "Current and Prospective Markets for Beer Packages Smaller Than 12 Ounces" summarizes current usage of American Can Company's 211 x 306 8 ounce beer can, discusses the market for less-than-12 ounce beer packages in general, and evaluates the request by Storz of Omaha that Continental produce a redesigned 8 ounce can.

American Can supplies three brewers with 8 ounce cans from Chicago, and is now reported to have installed a second 8 ounce line to meet its demands. Two of these three brewers, Goetz of St. Joseph, Missouri, and Goebel of Detroit, have had significant success with this can, but in both cases this success has been with products *not* packaged in 12 ounce cans or 12 ounce export bottles. In the two instances where the same brand of beer has been marketed in both 8 and 12 ounce cans, sales of the 8 ounce package have been so small as to make any comparison of limited value.

The market for beer in less-than-12 ounce units (bottles and cans) as a whole requires further study but it is apparent that the pressure of inflation, tax rises and the trend toward smaller beer packages provide a sound basis for expecting a substantial, if minor, portion of the total packaged beer market to be sold in "small" units. While bottles may have a slight advantage cost-wise over cans in this size range, the can will undoubtedly share in this market segment.

Although the 211 x 306 size now produced by American Can is the least expensive 8 ounce can for a producer of 211 x 413 beer cans to manufacture, it is possible that a design more nearly proportional to a 7 ounce bottle will be desired by the brewing industry.

One brewer, Storz of Omaha, has already requested such a design for its proposed beer for women, knowledge of which, incidentally, is held in strict confidence by Continental.

This report concludes that the market for small beer packages is worthy of continued study and recommends that research be conducted on a new design for a 7 or 8 ounce can and that a consumer survey of beer container design be made in 1953. Furthermore, it is recommended that Continental offer to supply both Goetz and Storz with 211 x 306 8 ounce cans, pending the outcome of such research.

GB/ml

D. H. Walker.

cc: Messrs: T. C. Fogarty—#43, P. P. Wojtul—#43, R. L. Perin—#98, W. M. Cameron—#42, S. McKewen—#44.

[fol. 1189] **Current and Prospective Markets for Beer Packages Smaller Than 12 Ounces**

Attention has again been focused on the market for small beer packages and, particularly, for an 8 ounce can. Calls were made at the end of September, 1952 on several brewers currently using, or considering the use of, the 8 ounce can, and an analysis of the information thus obtained is presented.

The long-term trend in beer containers toward smaller sizes has generally stabilized, for the time being, at least, on the 12 ounce unit, although the size range presently extends from the 7 ounce "split" to the 32 ounce quart. The 8 ounce can is apparently about two years old and has been produced solely by American Can in Chicago. This current, and only, style is a "sawed off" 12 ounce flat top beer can, with dimensions of 211 x 306.

Only three brewers are known to have made use of this 8 ounce can, although the 7 ounce bottle is not uncommon among a number of brands. These three brewers, and the products packed, are:

1. M. K. Goetz Brewing Company, St. Joseph, Missouri

Goetz produces essentially two products, its Country Club Beer and its Country Club Malt Liquor. The beer is a popular priced brand and is marketed in the area surrounding Kansas City in 12 ounce bottles (export and one-way) and cans, and in 8 ounce cans. The malt liquor is a stronger, stout-like brew, selling at a premium price in 12 ounce one-way bottles and 8-ounce cans. The malt liquor, however while available locally, is distributed primarily in the Southwest and California, and not in the same distribution areas as their beer.

Goetz is very well pleased with the acceptance of its malt liquor, a major portion of which is being packaged in 8 ounce cans. (Goetz estimates that 80% of its California malt liquor sales is in cans.) On the other hand, sales of Goetz' *standard beer* in 8 ounce cans are negligible, although this package has not been aggressively promoted. This small can for Goetz' Country Club Beer was well received by the trade but consumer sales have been so small as to render meaningless any at-

tempt to measure its effect on sales of Country Club Beer in other containers, 12 ounce cans in particular. Typical retail price comparisons among Goetz products in Kansas City, Missouri are as follows:

	Goetz Country Club Beer	Goetz Country Club Malt Liquor
6 12 oz. export bottles . . .	\$.85 plus dep.	—
6 12 oz. cans . . . . .	.96- .98	—
6 12 oz. one-way bottles . . .	.96- .98	\$1.15
6 8 oz. cans . . . . .	.72- .90	.95- .99

[fol. 1190] This year is Goetz' first full test of its malt liquor and of the 8 ounce package. It is now filling 8 ounce malt liquor cans at the rate of $1\frac{1}{2}$ million units per week and expects to be up $2\frac{1}{2}$ million by next spring. This translates into annual 8 ounce can requirements of about 36 million for 1952 and perhaps 50-60 million for 1953, almost all of which should be for malt liquor. Goetz states that its requirements are now taking 75% of American Can Company's total 8 ounce can output (or 36 out of 50 million annually), but American is reportedly starting production on a second 8 ounce line in Chicago this month.

Mr. Byron Means, Assistant Secretary and Comptroller of Goetz, indicates that his firm is not particularly pushing *smaller packages*. (no smaller-than-12 ounce bottles are filled), nor has any thought been given to a 16 ounce package to complement the 8 ounce can. The malt liquor is a premium product (distributed through liquor distributors on the West Coast) and the small can not only reduces the apparent price but also provides a smaller consumption unit of a product which is considerably stronger (6% alcohol by weight) than standard beer.

2. Goebel Brewing Company, Detroit, Michigan

The Goebel Brewing Company, with two plants in Detroit, one in Muskegon, Michigan (draught only), and one in Oakland, California, is something of a hybrid between a regional brewer and a national brewer. Although its market penetration is probably strongest in the Lower Lakes area, it does sell its products from coast to coast in a wide scattering of states. Goebel

brews only one beer but markets this same beer under two ostensibly different brand names, Goebel Private Stock 22 Beer, and Bantam Beer by Goebel. Private Stock 22 sells at competitive popular prices in 12 ounce export and one-way bottles and cans, while Goebel Bantam is available only in 8 ounce cans and 7 ounce bottles. Since the term "bantam" means "small" or "diminutive", the name is a merchandising natural as applied solely to the 7 and 8 ounce packages. However, in spite of the fact that a "Private Stock 22" insigne appears on the Bantam container, it is apparent that a substantial portion of the public considers the Bantam Beer to be a separate, distinct and possibly superior brew as contrasted to the same beer sold in the 12 ounce package.

According to Mr. Robert Shiffer, Assistant General Sales Manager of Goebel, the 7 ounce bottle was first introduced by Goebel in Michigan as an attempt to place a "good" 5¢ packaged beer on the market. However, the resistance by Michigan tavernkeepers was so great that it was withdrawn and remarketed out-of-state at 10¢ where it met with substantial success. Goebel then began experimenting with a small can, but found that a 7 ounce can was too squat in appearance and settled on the 8 ounce size now obtained from American Can in Chicago. Goebel is completely satisfied with the size and proportions of this 211 x 306 beer can.

[fol. 1191] Sample prices for Goebel beer in the Detroit, Michigan market are:

	Goebel Private Stock 22 Beer	Goebel Bantam Beer
6 12 oz. export bottles.....	\$.74- .78 plus dep.	-
6 12 oz. cans.....	.95-1.00	-
6 12 oz. one-way bottles....	.87	-
6 8 oz. cans.....	-	\$.75- .76
6 7 oz. export bottles*	-	.54 plus dep.

* It is believed but not confirmed that 7 ounce one-way bottles are also used.

Goebel appears to follow a distribution policy of least resistance, particularly with regard to its Bantam Beer, in that it adapts its emphasis to the particular container that seems to take hold. The 7 ounce bottle is marketed in the Northeast, the Midwest and on the West Coast,

with the 8 ounce can fitting in where it will sell. The Bantam can is not available in the Far West, perhaps because of the lack of suitable filling equipment in Oakland, even though the can can easily be run on a 12 ounce line with height change parts. In Ohio, Goebel Bantam Ale, but not Bantam Beer, is sold in 8 ounce cans due to a legal restriction on *beer* in small containers.

Mr. Ted Goebel, Purchasing Agent of the Goebel firm, estimates his current 8 ounce can requirements to be 30 million units annually, which coupled with the needs of Goetz, would certainly seem to overtax American's single line capacity and would aid in explaining the addition of a second line in Chicago. While possibly on the optimistic side, cross-checking with other data obtained from Goebel and outside sources indicates that this figure could fit satisfactorily into the following estimated construction of Goebel's package distribution pattern, which is based on the ratios existing in July, 1952 and probably does not include the California operation.

Total Goebel Sales	100%	
Draught	15%	
Packaged	85%	100%
<hr/>		
Bottles as % of Total Packaged	83%	100%
12 oz. export & one-way	58%	70%
7 oz. Bantam bottles	25%	30%
Cans as % of Total Packaged	13%	100%
12 oz. flat top cans	8%	60%
8 oz. Bantam cans	5%	40%

If these ratios are indicative, Goebel Bantam Beer accounts for nearly one-third of total Packaged sales, and Bantam cans, for almost one-half, of the total Goebel can requirements. Even if somewhat overstated, these proportions are significantly high. One-way bottles have not been a singularly successful package except where they have been promoted *and* where the price differential has been passed on to the consumer. Goebel considers that 90% of its 8 ounce can volume is additional business and, particularly with the separate label, has little effect on its 12 ounce can sales. Importantly, the 7 ounce Bantam bottle has does well in on-premise con-

sumption only, while the 8 ounce Bantam can is primarily an off-premise item.

[fol. 1192] The firm believes that the appeal of the small package to women is a significant factor. Mr. Shiffer considers the 12 ounce size the standard package for most beer in general and doubts that the smaller containers will make serious inroads on the 12 ounce. No thought has been given to a 16 ounce size to accompany the Bantam and the one-way glass bottle is believed to have a limited future relative to the can.

3. Pittsburgh Brewing Company, Pittsburgh, Pennsylvania

Pittsburgh Brewing, with two plants in Pittsburgh, is a large volume brewer in its area, marketing two primary brands of beer at the same popular price. These are: Iron City Beer, packaged in 12 ounce export and one-way bottles and cone top cans, and Tech Beer, available in 12 ounce export bottles, 8 ounce "Gem Size" cans (from American Can), and 7 ounce select bottles. A third brand, Dutch Club Beer, is apparently of minor consequence and may well be dropped.

Tech "Premium" Beer (called premium although sold at popular prices) was originally marketed in 12 ounce export bottles, the Gem Size 8 ounce can having been added in 1950. This brewer was not interviewed directly but it is understood through Continental's Pittsburgh office that the sale of the Tech Gem has been somewhat disappointing. Estimated usage of 8 ounce cans is about 3 million annually, which is considerably less than Pittsburgh's cone top requirements and a decimal of the volume of small cans reportedly used by both Goetz and Goebel. Nevertheless, there are no known indications that abandonment of the Gem Size is contemplated at the present time.

In addition to these three firms currently packaging beer in the 8 ounce flat top can made by American, part of the management of a fourth, Storz Brewing Company of

Omaha, Nebraska, is seriously interested in the use of a small can for the marketing of a new beer to be tailored especially for women. Their ideas is as follows:

Storz Brewing Company, Omaha, Nebraska

Although Storz is not so large a brewer as Goetz, Goebel or Pittsburgh, this firm has an enviable dominance of the Omaha beer market. Furthermore, this leadership has been achieved not so much through the sale of Storz Triumph Beer, a popularly priced product, but rather through the sale of Storz Premium Dry Select Beer, which retails at prices between those of the popular beers and those of the national premium brands. Storz appears to be aggressively promotion-minded and utilizes export and one-way bottles and flat top cans.

Mr. Robert Storz, Vice-President, Secretary, and Sales and Advertising Manager of the firm, is desirous of persuading the rest of his management to market a special beer, brewed and packaged solely for women. He and his staff have conducted some intensive research on beer consumption habits and have concluded that, while some 62% of the populace drinks beer, over half of all male beer drinkers, and well over three-fourths of all female beer drinkers, drink beer only occasionally (one to three 12 ounce units per week). Among consumer objections to beer, its tendency to be too filling and its bitter taste were the most important. Mr. Storz furthermore pointed to the general association of beer as a man's drink, despite the recent tendency toward "pale dry" beers noted in so many markets, and to the historic trend among beer containers toward smaller packages.

[fol. 1193] Mr. Storz is convinced that the market is ripe for the introduction of a beer so brewed as to suit the female taste and so packaged in a feministically decorated container as to suggest its purpose on sight. He believes that a major way to increase beer sales is to increase the per capita consumption of female beer drinkers who are overwhelmingly in the

"occasional" class. Consequently he and his associates, who have been counseled by a Mr. Richard R. Fowler, a marketing consultant, who is also merchandising director for the National Beer Wholesalers Association, have applied for trade marks on the names "Storzette" and "Beerette" and intend to use the former in particular for their new feminine brew. Their thought is to employ a small package (the 7 ounce one-way clear glass bottle and an 8 ounce can) in order to provide a unit of consumption more desirable to women. Both label and container design would be unmistakably based on an appeal to women, so much so as almost to resemble cosmetic products, for example. While certain states, including Nebraska, have statutory minimum size limits for beer containers, thus posing certain but not insurmountable problems to Storz, the 7 and 8 ounce packages are favored because of the apparent incidence of beverage tax rises, the mass market appeal to occasional and non-beer drinkers, the novelty of a small package, and the long-term trend to smaller containers. Mr. Storz proposes to price his new product on the basis of Storzette Beer in 8 ounce cans, so that the 7 ounce bottle sales would be the more profitable item, since the container cost is less and a smaller quantity of beer is involved. The can, however, would as much as halve the cost per package of 6 unit paper-board pack carriers, in that a 6 can carrier costs roughly .4¢ per can, whereas a 6 bottle carrier would cost closer to .8¢.

Storz currently calculates that its cost of putting the 8 ounce Storzette can on the market is close to that of its 12 ounce can of beer, as shown:

Dock cost (and price), 24 12 oz. cans (288 oz.)
\$2.69

Estimated dock cost, 24 8 oz. Storzette cans (192 oz.) \$2.36

Anticipated dock price 24 8 oz. Storzette cans (192 oz.) \$2.55

(7 ounce one-way Storzette bottle would presumably sell for close to this 8 ounce can price)

Of major significance is the fact that Storzette would not be sold in any of Storz' regular beer distributing areas, but would be exported to California and the West Coast where a more urban and possibly more sophisticated market might be found. While recognizing that the project could be a complete failure, Mr. Storz believes that by the middle of next year, the Storzette potential *could* well be 75,000 barrels annually. This translates into some 35 to 40 million 7 and 8 ounce units. The West Coast not only is viewed as a probably more receptive market for such a product, but it is believed that Storzette would be a most effective entrant in creating acceptance of Storz products in general in such a new marketing area.

[fol. 1194] Having developed the essence of a new product marketing program as they have, this Storz group is primarily concerned with the container and its design. While there does exist division of opinion as to whether the can or the bottle is the preferable package for such a product, there is no doubt in the group's mind that the American Can 211 x 306 8 ounce can is too squat for their satisfaction. Consequently, they wish Continental to consider the manufacture of an 8 ounce beer can of a smaller diameter and larger height than the current American Can model. It is their belief that such a can would be a much more graceful and appealing Storzette container companion to the slender 7 ounce bottle.

Conclusion

The subject at hand is divisible into three main and inter-related categories:

1. The market for "small" beer packages.
2. The competitive position of the "small" beer can in this market segment.
3. The most desirable can style and dimensions in the "small" beer can field.

1. The market for "small" beer packages.

A period of inflation, despite its reduction of purchasing power, gives an impetus to smaller packages of all sorts in order to reduce the apparent effect of product price rises. This, coupled with concurrent tax increases and the admitted trend from larger to smaller beer packages, is sufficient to explain the observed increase in the number of 7 and 8 ounce beer containers being filled. There is obviously a physical and economical limit to which such container size reduction can go, and the test of the permanence and size of such a container demand will occur after the readjustment of the consumer to his new effective income and to the new packages from the point of actual cost per unit of beer, and convenience and appeal of the smaller units. If the smaller packages can increase beer consumption in the "occasional" drinker category, and cause some non-drinkers at least to enter the "occasional" class, then, even though there may be a compensatory switch of 12 ounce unit drinkers to smaller containers, the small package will become a permanent factor which few competitive brewers will be able to ignore. If such events should come to pass, it would be logical to expect the development of a 14 to 16 ounce "economy" size to offset the competing effects of the small sizes on the sale of beer in 12 ounce units. There is no indication of such a trend at the present time. In some states, the 12 ounce container is protected, for the time, at least, by minimum container size laws.

2. The competitive position of the "small" beer can.

The market position of the beer can relative to bottles is certainly not improved by the introduction of smaller packages. Since the value per unit of beer is greater than that of soft drinks, the can does not meet the [fol. 1195] same obstacles it does in that field. However, since an 8 ounce can is presently in effect being compared with a 7 ounce bottle, the unit price advantage lies even more than normally with the bottle. Such present size standardization is perhaps unfortunate for the can, but it exists. Nevertheless, any suc-

cessful use of small bottles in large quantities will most likely be accompanied by similar use of cans because of their strong acceptance in the 12 ounce size. Of the three brewers currently using the 211 x 306 8 ounce beer cans made by American Can Company, two have had very little success with it for a standard beer which was and is packed in other containers. However, one of these two, plus the third, have enjoyed substantial sales in 8 ounce cans of *unique* beer products, namely a malt liquor selling at a premium price, and a standard beer so marketed as to identify the product solely with small containers. Furthermore, a fourth firm, contemplating the use of an 8 ounce can, would use it only for a uniquely premium brew—a beer for women. There has been so far no clear-cut test of the 8 ounce can as a container for standard beers in general. Evidences for this purpose which do exist are generally negative. However, future use of this can for premium products and by brewers wishing to differentiate their standard beers is not unlikely. The introduction of a second 8 ounce line by American Can is quiet indication that there is a definite market for such a size.

3. The most desirable can style and dimensions.

This problem can be decided only in the market or by competent consumer interrogation. While the users of the 211 x 306 beer can are apparently satisfied with it, they would probably accept one that is less stubby. One brewer contemplating the use of an 8 ounce container, however, is strong in his objections to the wide diameter of the current can and wishes one that is more nearly proportional to a 7 ounce bottle in comparison.

This brewer, Storz of Omaha, is contemplating the introduction of a novel product, a women's beer, and it seems logical that the firm might do all it can to minimize its investment in this risk venture, at least until public acceptance has been established for Storzette (its women's brew). In this connection, the use

by Storz of a 7 ounce bottle for its initial market test purposes would be most economical, with the development and use of a suitable small can following if the product itself is a success and the market seems receptive to a can as well as the bottle. If a can is considered desirable, a test of the acceptance of Storzette in cans could most economically be conducted through the use, either concurrently with the introduction of Storzette in bottles or after product acceptance has been determined, of a "standard" 211 x 306 8 ounce can.

In general, the market for small beer packages is still nebulous and, for the small beer can, it is even more so. In spite of the observations that no small beer package, and particularly no small can, are making outstanding inroads as containers in the beer market, there appears to be enough interest in the subject to suggest that there exists a strong possibility that the small package will in time command a minor but nevertheless significant share of this market. Since this situation could develop with surprising rapidity in the event that one or more of the [fol. 1196] major brewers places emphasis on a small package, it seems desirable that Continental begin research on a 7 or 8 ounce beer can of more appropriate dimensions than, but costwise competitive with, the 211 x 306 beer can, in order that the Company not lose ground in its competitive position in the total beer container market because of its failure to anticipate new product developments. In the interim, the supplying of a portion of Goetz' 8 ounce can requirements through the use of change parts on a 211 x 413 beer can line would not only assure the brewing industry that Continental is desirous of satisfying its varying needs but would also provide the Company with desirable experience in the field of small beer containers.

Recommendations

1. That Continental continue to keep very close watch on the small beer package market (both bottles and cans) and also keep informed on any tendency toward larger containers up to 16 ounces.

2. That Continental institute research on a 7 or 8 ounce beer can of appropriate dimensions, design and cost so as to be fully prepared for the possibility that the brewing industry will desire such a container in substantial quantities in the next few years.

3. That Continental suggest to Storz that

- a. Storz initially market its projected beer for women, Storzette, in 7 ounce bottles only, in order to test its acceptance at minimal cost;
- b. If the product, Storzette, is itself successful, Continental will provide Storz with 211 x 306 8 ounce cans for market testing of Storzette in small cans and at the same time will work with Storz on the design of a more proportional can;
- c. Continental will, if Storz is particularly desirous of marketing Storzette initially in *both* cans and bottles, provide Storz with 211 x 306 8 ounce cans made with height change parts on a standard beer can line, at the same time cooperating in the research on a more proportional can.

4. That Continental offer to produce 211 x 306 8 ounce beer cans for Goetz.

5. That Continental plan a survey in 1953 on consumer preferences for various types of beer containers.

Commercial Research Department,
October 31, 1952.

[fol. 1197] GOVERNMENT'S EXHIBIT 440A

Continental Can Company, Inc.

Inter-Company Memorandum

To: Location, #43—New York
Attention: Mr. M. M. Dukehart, Jr.
From: Location, #43—New York
Date: January 29, 1952
Subject: The Future of Canned Beer

At Mr. Dake's request I am submitting a summary of the discussions we have had concerning the future of canned beer, and our views concerning the outlook under conditions foreseeable at the present time.

The real question today is what impact the restrictions on use of beer cans—and the resulting inroads which the non-returnable bottle has made, and will continue to hold, as long as restrictions are in effect—will ultimately have on future demand for beer cans when they again become freely obtainable. On the basis of our experience to date and our analysis of the economic and market factors involved, we might summarize our conclusions as follows:

1. There is no good evidence to date to suggest that cans have reached a saturation level in consumer demand, and that when freely available, they will not *continue* to make inroads on the returnable bottle.
2. It is becoming apparent that the new excise tax increase and the new O.P.S. allowed price increase on packaged beer are not likely to reverse or even halt the downward trend in draught beer sales and the upward trend in packaged beer sales.
3. There is no reason to believe that under the same conditions which prevailed before M-25 restrictions the one-way bottle will fare any better *in the long run* than it did when cans were freely available.

With metal cans under restrictions again this year (and likely to remain restricted through at least the 3rd quar-

ter) the one-way bottle will have a chance to further strengthen its foothold in the market. How serious this might be to the future of canned beer cannot, of course, be fully determined until cans are again freely available and all market forces are at work under free market conditions. In this connection, following the suggestions of Mr. Heusner (of Pabst) and Mr. Goodwin (of Falstaff), I have discussed with Mr. A. J. Wood, of the research organization bearing his name, the kind of survey his organization might conduct which would help us to determine the answer to that question. It was concluded at that time (December 1951) that an objective test could be made only at such time as consumers could exercise a free choice among available containers. I plan to discuss this subject again with Mr. Wood around April or May to see if conditions have changed sufficiently to warrant undertaking a market study of some kind.

[fol. 1198] Until conditions are right for testing the preferences of consumers (and of distributors) we can surmise that, barring major changes not yet apparent, the one-way bottle will have an up-hill and probably losing fight with the can once cans have again become freely available. The key factor, in our estimation, is *pricing*. And up to now the one-way bottle has been unable to realize effectively its claimed advantage in price. In a few local situations where a price differential, (approximately 20¢ per case) has been maintained all the way to the consumer, the one-way bottle, was able to make some inroads prior to the can shortage. However, in many instances where the brewers' platform price is lower, the difference has been absorbed in distribution channels so that the retail price is usually about equal to that of the can. In a recent spot check in New York City, New Jersey and Connecticut, it was found that among the popular brands, the 12 oz. unit sold for the same retail price, whether in one-way bottles, returnable bottles or cans; typically 15¢ or 16¢, with the price of the returnable bottle including a 2¢ deposit.

A rather significant test of the real acceptance of one-way bottles was gained during the late months of 1951, when temporarily cans were available in fairly adequate

supply. Statistics show that sales of one-way bottles to brewers dropped off very sharply, while can shipments for September through November were running at a level exceeding the inflated figures of the comparable months in 1950. This heavy volume of beer can shipments apparently moved quickly through the trade and into ultimate consumption, indicating that consumers were quick to return to the preferred can when they were able to exercise a choice. Interviews with retailers during December indicated that retailers were very quick to drop the one-way bottle as soon as they could get canned beer and were opposed to carrying both the one-way bottle and the can in the same brand. The typical attitude was that if the consumer preferred glass, he could buy the returnable bottle (and throw it away) for the same price as the one-way bottle. Recalling their experiences of last summer when cans were in short supply, the retailers interviewed indicated that most consumers who asked for canned beer would switch brands rather than take bottle beer.

The basic advantages of the can have not as yet been disturbed significantly by M-25 restrictions. The can is still accepted as the most convenient package and there still remains the old trade antagonism to the one-way bottle because of breakage, poor stacking features, and the reluctance to stock a third kind of package for each brand carried. Although more people have purchased and temporarily accepted the one-way bottle as a result of can restrictions, we do not believe that the one-way bottle has gained a real consumer franchise which can hold for the *long run*. Further, in a period of rising income, as we have experienced since 1949, consumer price consciousness to the extent of any small price advantage which the one-way bottle might be able to achieve, tends to be minimized. If in the future a business recession were to develop, which led to wide spread unemployment and curtailed buying power, price consciousness would naturally increase. However, during such a period (probably of no more than one to two years duration) price consciousness would be likely to result in a temporary increase in the proportion of packaged beer sold in *returnable* bottles and perhaps some shift to the more economical quart size. For the long run, how-

ever, the beer can has achieved a solid consumer acceptance, which was still growing at the time restrictions were applied.

[fol. 1199] Looking at the shorter range picture, and particularly toward the first full year in which cans will be freely available, it appears likely that the can may suffer a temporary set back. One-way bottles will be available in greater volume next summer, and will be pushed in greater volume until cans are available. Brewers are undoubtedly weary of allocations and restrictions and will turn to the one-way bottle to fill a vacuum in the supply of throw-way packages. This factor plus the more wide-spread experience of consumers with the one-way bottle during 1951 and 1952 will make it quite unlikely that beer can shipments in 1953 (assuming that cans will be freely available by then) will reach the level that would have been reached without the set back caused by M-25 restrictions. However, there is still good reason to believe that the factors which made for a high and rising consumer demand for beer cans before restrictions will again come into play when cans are freely available. Brewers will be quick to change back to *meet the demands of the trade and of consumers*, once they feel assured of a free supply of cans, provided that they are not tied up with long-term contracts for one-way bottles.

Thus if restrictions are removed by 1953, it is probable that by 1954 demand for beer cans should be returning to the trend level which would have been reached—approximately 7 billion units per year—if there had been no restrictions in 1951 or 1952. In order to help assure this future it would seem important that during the current period of restrictions we conduct a *missionary campaign* among our brewer customers, advising them against selling their future short by tying themselves too closely to one-way bottles as a *substitute* for metal cans.

D. H. Walker.

DHW/ml

cc: Messrs: L. E. Dake—#43, W. K. Neuman—#43, W. M. Cameron—#42, F. I. Gill—#42, J. F. Fenn—#42, C. L. Westerbeck—#144

[fol. 1200]

GOVERNMENT'S EXHIBIT 441

Continental Can Company, Inc.

Internal Memorandum

To: Location, #43—New York
Attention: Mr. M. M. Dukehart
From: Location, #43—New York
Date: December 31, 1952
Subject: Beer Containers in the Baltimore Market

In the course of keeping in touch with the current situation in the various important beer markets in the country, this Department has recently made a brief investigation of the Baltimore market as a *case study*. This was a follow-up on a similar investigation made in 1949, examining the unusual competitive situation between cans and one-way bottles. While the basic situation was found to be fairly similar, the information obtained may be of interest to you.

Baltimore is *unique* both as a cut-price beer market and as one where the one-way bottle has made strong inroads. The former situation has not only given prominence to the normal cost differentials among containers but has also, in conjunction with a strong promotional campaign by the glass industry and the Baltimore brewers, aided the one-way bottle in establishing a fairly strong market position.

Price competition is unusually keen in Baltimore for two main reasons: (1) Licensing arrangements permit a wide variety of outlets to sell packaged beer, and (2) Although the two leading local brewers, Gunther and National, dominate the scene, Baltimore is not a captive market and a variety of national, regional and local brands is available. It is the wide extent of retail distribution, however, which is the more important factor. Licenses may be obtained for beer only, beer and wine, and beer, wine and liquor; and establishments licensed for on-premise consumption may also sell packaged beer for off-premise consumption. Retail outlets for beer fall into four main categories:

1. Package Stores: Beer, wine and liquor, off-premise
2. Taverns: Beer, wine and liquor, on-and off-premise

3. Drug Stores: Beer, wine and, sometimes, liquor, off-premise
4. Food Stores: Beer, wine and, sometimes, liquor, off-premise

A few "carry-out" type of retail beer distributors also exist, but have not carried their specialty to the merchandising level found in and around Cincinnati, for instance.

Of major significance in the Baltimore beer market is the legal restriction against food and drug chains in regard to selling alcoholic beverages. Only *one* store of a chain can possess a license to sell beer, wine and liquor. Consequently, super markets, which are mainly a chain operation (even if only a few units in number), are very unimportant in the Baltimore beer picture. This in turn tends to protect the small local food store which may then sell beer at a discount to attract food business. These stores, however, are similarly vulnerable to price competition from the neighborhood package store (which carries beer but *sells* liquor). The result is a relative surplus of retail beer outlets which inevitably leads to price cutting and demands for price-fixing.

[fol. 1201] Against this background, Baltimore was a market that was ripe for a promotional campaign by the glass manufacturers and the Baltimore brewers, in which a significant price differential between cans and one-way bottles would be passed on to the consumer. This campaign, aided by the limitations on metal can usage imposed by the Korean War, has been successful in making Baltimoreans aware of the price differential, in establishing the differential as part of the general price pattern, and in enabling one-way bottles to outsell cans.

The increase in one-way bottles sales has been largely at the expense of cans, with the combined total of cans and one-way bottles remaining fairly well in line with the national average—about 30 to 35% of total packaged beer sales this year.

National Brewing Co. indicated that its ratios of cans and one-ways were approximately as follows. These ratios would not, of course, be representative of nationally adver-

tized brands, which are typically sold for the same retail price in cans as in one-way bottles.

	% of Total Packaged Beer Sales National Brewing Co.			
	1949	1950	1951	1952
Cans	17%	22%	16%	16%
One-Way Bottles	8%	10%	17%	20%

Indications have been given that in Baltimore proper the one-way bottle has been outselling the metal can by as much as 2 to 1 for *local brands*. Obviously, such a situation is a matter of concern to can manufacturers. The American Can Company has been sufficiently interested to have commissioned a research agency to conduct a pilot survey in Baltimore (copies of which have been presented to Baltimore brewers) seeking to determine factors influencing consumer preference for cans or one-way bottles for beer.

The survey found what was already fairly clear—that *price was a critical factor*—and observed that a 17-19¢ per case price differential (one-ways below cans) was passed on to the consumer in 2/3 of the stores included in the sample. However, even in outlets where the full price differential was not passed on, the one-way bottle was selling fairly well, presumably as a result of the intensive promotional campaign which began in 1949.

The consumer sample of the American Can study indicated that women were not clear in their container preference but that men readily chose the one-way bottle because of the lower price. In their most recent purchases, interviewees named the one-way bottle over the can by a 2 to 1 ratio. However, under conditions of *equal price*, the consumer preference ratio reversed to nearly 2 to 1 in favor of cans. (For the U. S. as a whole the ratio, in favor of cans, is better than 4 to 1.)

[fol. 1202] Examples of the price structure in Baltimore in the early Fall of this year are as follows:

Typical Price Per Case of 24	Popular Brands (Gunther, National Bohemian, etc.)	Premium Brands (Schlitz, Budweiser, etc.)
Export Bottles		
Brewery	\$1.85+dep.	\$3.45+dep.
Wholesale	2.35+dep.	
Retail	2.69-2.79+dep.	4.01+dep.
Margin .....	.34-.44	.56
Margin as % of Retail	12.6%-15.8%	14.0%
Cans		
Brewery	2.44	3.04
Wholesale	2.87	3.69
Retail	3.28-3.40	4.16-4.40
Margin .....	.41-.53	.47-.71
Margin as % of Retail	12.5%-15.6%	11.3%-16.1%
One-Way Bottles		
Brewery	2.22	3.07
Wholesale	2.68	3.69
Retail	3.13-3.25	4.16-4.40
Margin .....	.45-.57	.47
Margin as % of Retail	14.4%-17.5%	11.3%

Note.—Wholesale prices include tax.

Retail prices, it will be noted, vary considerably according to the type of outlet and are not entirely comparable in the above table. Wholesale prices provide a more direct comparison and are a guide to the typical differentials according to package. For local, popular-priced brands one-way bottles are priced at 19¢ per case below cans, which would make the typical unit price at retail nearly 1¢ less. Returnable bottles including deposit of 48¢ are only 3¢ per case less than cans, which would make them sell typically at the same unit price in retail stores including 2¢ per bottle deposit. One-ways, therefore sell at a price advantage over cans and are only 1¢ per bottle more than the net price of returnables. For nationally advertized (premium) brands, the situation is, however, quite different. One-ways and cans are priced to sell at the same price, and both are 24¢ per case, or 1¢ per unit, less than the returnable bottle including deposit.

Although one-way bottles have not succeeded in gaining a comparable market position in any other important city or region, the Baltimore situation illustrates the kind of penetration possible where the following circumstances are uniquely favorable to one-way bottles:

[fol. 1203] (1) Local brewers, by their pricing, assure a price differential in favor of the one-way bottle of nearly 1¢ per package below the price of canned beer.

(2) Local brewers actively advertize and promote the one-way bottle—including advertising the lower price *at retail*, thus forcing the differential to be passed along.

(3) Cut-rate pricing is common in retail outlets.

(4) Consumers frequently purchase by the case.

(5) Sales in super-markets are a relatively unimportant part of total retail sales of packaged beer.

Of all the above factors, *price* is the most important, of course. Although total actual costs to the brewers, and to the trade, cannot be accurately determined, the 19¢ per case differential in favor of one-ways for local brands in Baltimore is an *artificial* one, judging by estimated container costs, and by the pricing patterns in other areas. Without allowing for savings in cans, resulting from higher filling speeds, lack of breakage, larger delivery loads and lower handling and storage costs; which would reduce the true cost differential between one-way bottles and cans, it is estimated that the actual difference in cost during the past season was only about 10 to 12¢ per case, as indicated below. Prices of containers, cartons, etc. will vary according to locality and according to types of cartons, labels, etc. actually used, but those below are fairly typical.

Comparison of Typical Prices to Brewers
Cans vs. One-Way Bottles
August 1952

	12 oz. GB-8 Bottle Price Per M	Price per Case	Lithographed Can 12 oz., F.T., 4 Color Price per M	Price per Case
Containers.....			\$29.51	\$ 7082
Containers.....	\$25.70	\$.6170		
Cartons.....			3.75	.0900
Labels.....	1.30	.0312		
Crowns.....	1.81	.0433		
Total.....	\$28.81	\$.6915	\$33.26	\$ 7982
Difference, without 6-packs.....			4.45	.1067
Less: Estimated saving on 6-pack cartons*.....			3.33	.0800
Difference, if 6-packs are used.....			1.12	.0267

* Comparative prices for 6-pack cartons are \$48 per M cartons for bottles, and \$28 per M cartons for cans.

[fol. 1204] Since last summer, beer can prices have been increased slightly (nearly 3¢ per case) and a new one-way bottle, the G B-7, has been introduced, at a price of 10¢ per case below the old G B-8. The following table shows the comparative costs at the present time.

Comparative Prices of Cans vs. One-Way Bottles
January 1953

	12 oz. GB-7 Bottle		Lithographed Can	
	Per M	Per Case	12 oz., F.T., 4 Color Per M	Per Case
Containers & Cartons....	\$21.50	\$ 5160	\$34.43	\$ 8263
Labels.....	1.30	.0312	.....	.....
Crowns.....	1.91	.0458	.....	.....
Total.....	\$24.71	\$ 5930	\$34.43	\$ 8263
Difference, without 6-packs.....			9.72	2333
Less: saving on 6-pack cartons.....			3.33	.0800
Difference, if 6-packs are used.....			6.39	1533

The new G B-7's lower price is not expected to be passed along by Baltimore brewers, in which case the typical wholesale price differential of 19¢ per case for beer in one-way bottles versus beer in cans will be more nearly realistic in terms of costs to the brewer, and there is no longer the expectation that competitive pressures might in time substantially reduce the artificial differential which has been in effect. Thus, it is not to be expected that the competitive position of the can—for local brewers—will improve very significantly, as long as the local brewers continue active promotion of the one-way bottles.

This study has, however, proved to be enlightening as an indication of the significance of price as a factor in the package preference of consumers. In this regard the new G B-7 bottle becomes a potential threat to the beer can which cannot be lightly dismissed, since it reduces the cost of a bottle of beer by nearly ½ cent (10¢ per case). If this differential is passed along in market areas (New York Metropolitan Area, for example) where the one-way bottle has failed to catch on, it might well bolster the competitive position of the one-way bottle enough to cut significantly into potential can volume. For this reason, we plan considerably more study on the future competitive position of the can as a package for beer, particularly as affected by prices and pricing structures in various markets.

[fol. 1205] It may well be that a new promotional effort will be needed to help offset the lower cost of one-way bottles, but that remains to be considered after the possibilities of the new G B-7 have been adequately tested.

D. H. Walker.

DHW/ml

cc: Messrs: T. C. Fogarty—#43, P. P. Wojtul—#43, W. K. Neuman—#43, R. G. Fisher—#43, W. P. Murray—#98, L. G. Cannella—#98, W. B. Larkin—#42, J. F. Fenn—#42, H. M. Blinn—#44, G. Bollinger—#124.

**A Comprehensive National Study of Consumer Preferences
for Different Types of Beer Containers**

**prepared for Continental Can Company, Incorporated, by
A. J. Wood & Company**

**Philadelphia-New York-Chicago-Los Angeles
January, 1954**

[fol. 1207]

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[fol. 1208] A Comprehensive National Study of Consumer Preferences for Different Types of Beer Containers

Purpose and Method

The purpose of this study was to provide a complete and detailed analysis of consumer preferences for different types of beer containers with the aim of developing information in two basic categories:

1. To attempt to uncover information which will aid Continental Can Company to show Brewers that the use of cans is advantageous in the merchandising of beer.
2. To compile a mass of descriptive and explanatory information covering the general market picture for the various beer containers: the extent of use, drinking and buying habits, and consumers attitudes and reactions towards cans versus bottles for beer.

To achieve these dual objectives, the study was necessarily comprehensive in nature going into all of the ramifications of the use of and the preferences for the various beer containers.

The study was conducted among a cross-section of beer drinkers on the basis of a national sample representing all cities and towns of 1,000 population and over. All results are based on personal interviews conducted in the respondents' homes.

In total 4166 adults were interviewed throughout the [fol. 1209] country, of which 1823 were found to be beer drinkers in accordance with the definition established—"those who drank some packaged beer within the last two weeks preceding the interview." This definition was established to eliminate the sporadic or very occasional drinker whose views on the subject would not be sufficiently crystallized.

In addition to developing the picture for the country as a whole it was desired to have some of the basic information broken down separately for the four major geographic areas of the country—East, South, Mid-West, and Far

West. To insure a sample of sufficient size for these area breakdowns it was necessary to assign approximately twice as many interviews in the Far West as would have been necessary for proper representation. In order to maintain a correctly proportionate sample for the country as a whole, in all tabulations shown for the total country the interviews in the East, South, and Mid-West were given double weight in tabulation. In this manner the proportion geographic balance was established while utilizing all interviews actually conducted. Naturally, these weights were removed for tabulations broken down separately for each area. The table below shows for each geographic area, the actual number of interviews conducted including drinkers and non-drinkers, the number after weighting, and the actual percentage distribution of the population.

	Actual number of interviews conducted		Number of in- terviews after weighting		Actual percentage distribution of the population
	No.	%	No.	%	%
East.....	1258	30	2516	34	34
South.....	729	18	1458	20	22
Mid-West.....	1159	28	2318	32	30
Far West.....	1020	24	1020	14	14
Total.....	4166	100	7312	100	100

2738

[fol. 1210]

GOVERNMENT'S EXHIBIT 445

**Retail Level Study of New Quart Beer Can Acceptance
in Chicago**

**Commercial Research Department
February 21, 1956**

[fol. 1211] #43—Head Office

Mr. C. H. Buckley

February 21, 1956.

**Retail Level Study of New Quart Beer Can Acceptance
in Chicago**

As you know, Mr. Walter Way spent a week recently in Chicago to study the movement of this new container at the retail level. Chicago was picked because this market was the first in which the new American quart can achieved widespread distribution under the Pabst label. Working with Mr. Way in contacting a large representative group of beer outlets were two Central Division sales trainees. Among them they covered about 250 outlets in all parts of the City.

Mr. Way found that generally, although distribution secured by Pabst has been widespread in Chicago, their label is not an extremely heavy mover in quarts and inasmuch as a great deal of the volume movement has replaced Pabst glass quarts, the over-all level of sales for the new container is not high. However, the impression was gained that this new container, when attractively priced about equal to the throw away bottles, met with consumer acceptance and should brands having large shares of particular markets be sold in such a container, heavy movement could be expected.

Further copies of this report are available.

Dana Hill.

DH:eor

cc: Messrs. P. P. Wojtul, R. G. Fisher, W. K. Neuman, R. S. Hatfield, L. A. Carey.

**[fol. 1212] Retail Level Study of New Quart Beer Can
Acceptance in Chicago**

During the week of January 23-27, a survey was conducted in Chicago to determine how well the new Pabst quart beer can was moving, and to measure consumer and dealer reaction to the new package.

Conclusions

Several conclusions were reached as a result of the information obtained from the survey. Although the quart can has not yet done too well in Chicago, there were strong indications that the consumer would eventually accept the package—especially in the summer. Thus far, in those areas where the can has moved well, it has been at the expense of quart bottles rather than smaller sized packages. The can will be unable to make inroads with price conscious consumers, as they generally buy local beers in returnable bottles because of the cost savings. The retailer generally favors the quart can, but as a replacement for quart bottles. There will be resistance to stocking any more packages. For the most part, brand loyalty was found to be significant, and only a few consumers switched brands to get the quart can. Most retailers wanted to see other brands in the quart can, and felt that the package would move faster with brands more popular with their customers. The can itself was quite acceptable, although many consumers didn't like the pouring feature. Some found that the beer went flat when recapped, and some difficulty in opening was encountered, although reaction to the opening feature was favorable. The stacking feature was unimportant, both because of the widespread use of the paper [fol. 1213] two-pak and also the lack of mass displays.

Method of Conducting Survey

In order to set up the survey, a complete listing of the nearly 9,000 liquor outlets in the City of Chicago was obtained, complete with addresses. Taverns and night clubs selling for on-premise consumption only were eliminated, along with most miscellaneous package stores, including drug and grocery stores. Of the more than 2,000 outlets remaining, about 140 were package liquor stores, while the rest were combination tavern and package stores. These outlets formed the basis of the survey. The city was divided into more than fifty small areas, in order to obtain a fairly reliable cross section of the City of Chicago. Some outlets in each of as many of these areas as possible were chosen for the survey, with the result that the sample obtained precludes the possibility of being heavily weighted.

by any single section. More than 200 completed questionnaires were obtained, with several others omitted because of lack of information.

Detailed Findings

There is little question as to the fact that Pabst has obtained good distribution with their quart can. Only about one in every ten outlets was not carrying the package, and some of those had had it, and dropped it. In several places where the can had been stocked, the dealer had dropped the Pabst quart bottle because he did not wish to carry additional packages for one brand in a single size.

[fol. 1214] There was great variation in the price of Pabst's quart can, although it was generally priced at 45¢-47¢. In some places it sold for as much as 50¢, while one store was still working on a "deal", and was selling it for 39¢. For the most part, the price was virtually the same as premium one-way quart bottles, and from 2¢ to 5¢ above the cost of the premium returnable bottle without deposit. About two out of every five outlets carried only returnable or one-way premium quart bottles, but not both. Very few stores carried the same brand in both the one-way and returnable bottles. In several instances, all three quart packages were selling at the same price, with the returnable bottle having an extra nickel added on for deposit. In these cases, the can was moving quite well, but the dealer complained that with such a price structure, he made less profit on the can than on the other packages.

In some areas price has had a definite influence on the poor showing of the new can, although in those areas where it made a real difference, premium beers made no headway against the low priced local brands. For the most part, local brands in returnable bottles sold for 10¢ below the premium beer in the same container, although the differential was as high as 14¢ in some places, and as low as 7¢ in others. There was one local brand (Prima) which was selling well below the other Chicago beers—occasionally as low as 23¢.

[fol. 1215] Several dealers felt that this was a bad time to introduce a new convenience package, as their beer business was at a seasonal low. Many expressed the opinion

that when hot weather came, it would move very well. Dealers also expressed the opinion that one reason the package was not moving was the low popularity of Pabst with their customers. They felt that brand loyalty was strong in their area, and that more popular brands would move well in a quart can. The dealers themselves were generally in favor of the quart can. However, they would want to see it replace the quart bottles entirely, and they don't want to take on additional packages. On the other hand, several dealers wanted no part of cans, as they felt that the returnable bottles brought their customers back.

The can utilized by Pabst drew several comments during the course of the survey. Nearly all the advantages inherent in any can were mentioned frequently, i.e., easier to handle, eliminates deposits, chills easier, stays cold longer, no breakage, takes less storage space, etc. In addition, the snap cap and the opening feature drew quite a lot of favorable comment, although there were a few instances where the dealer said that his customers complained that the can didn't open as advertised. The largest complaint against the can was the pouring feature. It was stated that when you poured slowly, the beer dribbled down the side of the can, and when you poured fast, you either completely overshot the glass or else got so much foam that you couldn't get at the beer. Metallic taste was brought [fol. 1216] up a few times, and in some cases the taste was reported as just being different than that of bottled beer. Several dealers reported their customers as saying that the snap cap was fine, but that the beer went flat when the cap was replaced. A few voiced complaints about leakers, but these came from only a very small percentage of the outlets carrying the can. The stacking feature came in for only a small amount of comment, as most of the outlets visited kept their beer refrigerated, and didn't have room to make displays. When mass displays were built, the two can cartons were used, thus minimizing the advantage of a stacking feature, since any can will stack in cartons.

In those areas where the quart can was moving quite well, it seemed to be almost entirely at the expense of quart bottles, and for the most part, Pabst quart bottles. In these

areas, repeat business was reported, but generally from old Pabst drinkers from way back. Several dealers expressed the belief that a more popular brand (Schlitz was mentioned several times) would move much better, and probably at the expense of other brands.

[fol. 1217] GOVERNMENT'S EXHIBIT 446

Carbonyl Compounds in Schlitz Beer (Test Pack C659)

To Determine the Volatile Carbonyl Content of Schlitz Beer

Report

3202-015-57

3202-010-57

Introduction

The problem of beer stability in cans was presented to the Packaging Engineering and Container Research groups in May, 1957¹. It was stated that beer in cans had about half the shelf life of beer in bottles. Container Research was charged with the responsibility of making fundamental studies of beer in the hope of isolating the causative agents of these flavor changes; it was anticipated that once these flavor changing factors were known, it would be possible to relate them to specific components of the beer can, thereby making it possible to make corrective changes in the beer can if such were necessary.

On the basis of a literature survey and trips to Milwaukee² and Madison³ to consult with workers in the field of beer chemistry, it was decided that changes occurring in the volatile carbonyl compounds of beer on storage represented a logical area of investigation.

A test pack of Schlitz beer was made in Milwaukee at the Joseph Schlitz brewery on July 16, 1957. Beer from the same government cellar was used in both bottles and cans, and 25 cases of each variable were packed in this fashion. These cans were stored at 40°F., 70°F., and 100°F. This beer was used for this investigation.

Conclusions

The carbonyl content of the volatile fractions of Schlitz Beer packed in bottles and cans and stored for three months at 40°F. was practically identical. This determination was made by preparing the dinitrophenylhydrazones of these carbonyl compounds and weighing them.

The weight of the dinitrophenylhydrazone derivatives obtained from bottles and cans stored at 100°F. was also practically identical. However, the level at 100°F. was slightly lower (by about 8 mg.) than that at 40°F., indicating that at the higher storage temperature there was some loss of volatile carbonyl content.

An analytical determination of the acetaldehyde content of this beer and a conversion of this value to dinitrophenylhydrazone derivative showed the calculated value to be very close to the gravimetrically derived value. This suggests strongly that the major constituent of the volatile fraction is acetaldehyde.

Acetaldehyde and dinitrophenylhydrazone determinations on Blatz beer stored for two years at 70°F. yielded only trace amount of these materials, suggesting that volatile carbonyl components tend to diminish on storage.

The Beverage Section flavor test panel was able to detect a flavor difference between cans and bottles at the three month storage level (40°F.) but as indicated from the volatile carbonyl content described above, it was not possible to establish any correlation between flavor changes and carbonyl content.

Recommendations

Since the data collected in this experiment suggest that volatile carbonyl compounds are not involved in flavor changes occurring in bottled and canned beer, it is recommended that additional investigations be directed to other [fol. 1218] fractions of the beer.

For example, it may be possible to separate whole beer into several fractions by column chromatography, using such adsorbents as carboxymethylcellulose. An attempt can then be made to characterize these fractions by paper electrophoresis. Beer from the same government cellar packed in bottles and cans should be used for these investigations.

Lyophilization (freeze drying) is another investigative

technique that may be followed. Beer can be lyophilized, and the volatile fractions can be separated and identified by various chromatographic techniques. The non-volatile fraction of lyophilized beer containing the nitrogenous components can then be investigated by paper electrophoresis techniques.

It is also recommended that further investigations along organoleptic lines be considered. For example, the volatile fractions of canned and bottled beer can be collected and concentrated; small portions of this concentrate can then be added to distilled water and to fresh beer to see if the original flavor can be detected again. The same procedure can be applied to the non-volatile fraction. If the sources of "canned" and "bottled" beer flavor can be isolated by this technique, then the originating fractions can be intensively investigated via chromatography, electrophoresis, infrared, or other modern investigative techniques in an attempt to isolate and identify the flavor causing agents.

Procedure

Complete details of the investigation made on the volatile carbonyl fraction of Schlitz beer pack C659 can be found in data book pages L604-17 and L640-46 appended to this report.⁸ These details can be summarized briefly as follows: an attempt to separate the volatile carbonyl fraction via vacuum distillation at room temperature into acidified 2,4 dinitrophenylhydrazine was unsuccessful as no dinitrophenylhydrazone precipitate appeared in the distillate; the immersion of the distilling flask into a water bath at 130-140°F. also yielded negative results. Air was used to sweep the volatile fraction over into the distillate. Some contamination of the distillate resulted due to bumping and frothing of the product during the distillation.

A crystalline dinitrophenylhydrazone precipitate was formed when beer was distilled at 180-212°F. and atmospheric pressure, but when vacuum distillation was attempted in order to lower the temperature of distillation, there was excessive carryover of beer into the distillate caused by bumping and frothing and, hence, this procedure was abandoned.

It was finally decided to use distillation at atmospheric pressure and 180-212°F. temperatures; nitrogen gas was

used to sweep the volatiles into the acidified 2,4 dinitrophenylhydrazine in the receiving flask. Three bottles and three cans at 40°F. storage and 100°F. storage were treated in this fashion and the dinitrophenylhydrazones from each group of three variables were concentrated in one receiver. These receiving flasks were put away for several weeks in the dark at room temperature while efforts were concentrated on the determination of acetaldehyde and acrolein.

Emphasis on the determination of these two aldehydes was made when uncertainties arose as to the further treatment of the dinitrophenylhydrazones collected as described above. It was originally intended that a simple gravimetric determination of dinitrophenylhydrazone would be [fol. 1219] made of beer at various storage levels in bottles and cans to see if the dinitrophenylhydrazone content would be related to storage temperature and container variable. However, Dr. R. E. Henry indicated that a chromatographic separation of dinitrophenylhydrazones would be necessary in order to identify them and that this would be a long and tedious procedure. Other literature sources⁵ indicated that the acetaldehyde and acrolein were important volatile substances contributing to odor and flavor; simple colorimetric procedures for their identification were described. Consequently, it was decided to make these identifications in this Schlitz beer pack, and from the results obtained, decide whether or not the more elaborate chromatographic procedures would be warranted.

The investigations of the acetaldehyde and acrolein content of Schlitz beer pack C659 are described in pages L618-39 appended to this report.⁷ It can be seen that no acrolein was found, and the acetaldehyde found was approximately the same in both bottles and cans at 40°F. and at 100°F. For example, after three months storage at 40°F., the acetaldehyde level was approximately 6 ppm in both bottles and cans; at 100°F. it was approximately 5 ppm. Thus, there was a 1 ppm difference between the two storage levels but no difference in the bottles and cans at each temperature, and thus the acetaldehyde content was independent of the container variable employed.

The acetaldehyde content was also determined in several other beers. For example, in Braumeister beer pack C755 where beer from the same government cellar was packed into both bottles and cans in a fashion similar to

Schlitz pack C659, the acetaldehyde level in both bottles and cans after two months storage at 70°F. was approximately 4.5 ppm. Again there was no difference which could be traced to an effect due to the container variable employed.

Since no further matched bottle versus can packs were available for acetaldehyde determinations, several other packs were used to develop further information on acetaldehyde content. For instance, Blatz beer in bottles stored for three months at 40°F. yielded a value of 6.7 ppm. Two year old Blatz beer stored in cans at 70°F. had an acetaldehyde content of 2.6 ppm. This seems to indicate that the acetaldehyde level decreases with storage.

It was now decided to go back and make gravimetric determinations on the dinitrophenylhydrazones precipitates obtained from Schlitz beer C659. In this connection, an article in the literature⁶ indicated that from 95 to 100% of aldehydes in an aqueous solution could be recovered by precipitating them as dinitrophenylhydrazones. These gravimetric determinations were then made, and when the acetaldehyde values were converted to their theoretical dinitrophenylhydrazones and the values were compared to the gravimetric figures, there was very close agreement between the two sets of data, indicating that the volatile carbonyl fraction of Schlitz beer consisted for the most part of acetaldehyde. The figures are summarized below. (See pp. L644-45 for further details)

		Gravimetric	Theoretical
Schlitz bottles	—3 months at 40° F.	33.2 mg.	32.0 mg.
Schlitz cans	—3 months at 40° F.	31.5 mg.	32.1 mg.
Schlitz bottles	—3 months at 100° F.	26.5 mg.	25.8 mg.
Schlitz cans	—3 months at 100° F.	25.7 mg.	25.8 mg.

The flavor panel in the Beverage Section had been able to detect a flavor difference between these bottles and cans [fol. 1220] stored at 40°F. At 100°F., the beer had deteriorated badly after three months in both bottles and cans, making it impossible to make this differentiation. However, it can be seen at the 40°F. level that the acetaldehyde determination yielded no clue as to the flavor difference found.

S. W. Drigot
12/5/57

[fol. 1221]

References Cited

- ¹ Stability of Beer in Cans. S. W. Drigot, 5/14/57.
- ² Report on the Information Obtained from the Study of the Works by Drs. R. Bock and H. Reich on Constituents of Beer. A. Ravve, 6/10/57.
- ³ Report on the Visit with Drs. H. Reich and R. Bock to Discuss the Chemistry of Beer Stability. A. Ravve, 7/16/57.
- ⁴ Schlitz Beer Pack C659. Letter from S. W. Drigot to J. C. Brichta, Jr., 9/14/57.
- ⁵ Burger, M., Glenister, P. R., and Becker, K., *Proc. Am. Soc. Brg. Chem.* 1954, 98, "Acrolein and Other Aldehydes in Beer".
- ⁶ Iddles, H. A. and Jackson, C. E., *Ind. Eng. Chem. Anal. Ed.* 6 454-56 (1934) "Determination of Carbonyl Compounds by Means of 2,4 Dinitrophenylhydrazine".
- ⁷ *Acrolein and Other Aldehydes in Beer.* S. W. Drigot Container Research Data Book No. 3, pp. L618-39, 3202-015-57.
- ⁸ *Carbonyl Compounds in Schlitz Beer C659.* S. W. Drigot Container Research Data Book No. 3, pp. 604-17, 640-46, 3202-010-57.

[fol. 1222]

GOVERNMENT'S EXHIBIT 448

Sales Control Department

August 25, 1958.

Packaged Beer Trends

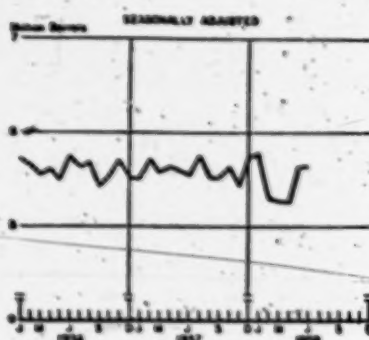
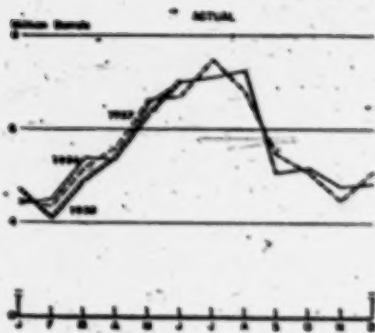
Continental Can Company

June Packaged Sales Soar

After four poor monthly showings in a row, packaged beer sales of 7 million barrels in June were more than 350,000 barrels or 5.3% above June, 1957. Total beer withdrawals enjoyed a 4% increase. The good monthly showing reflected the number of brewers which set company records for the month. For the first half, packaged sales were down .9%. Total beer sales were down slightly more —1%—as the draught variety slipped 1.7%.

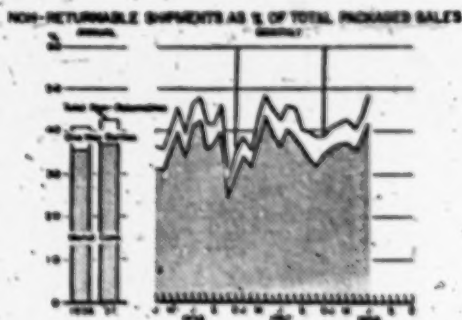
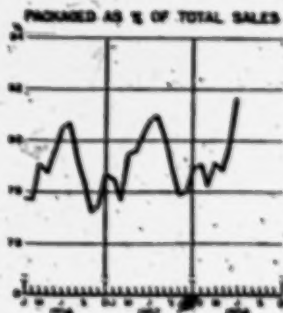
Packaged beer as a percent of total beer set a new high in June. The 81.7% level was one full point better than June, 1957. This brought the six month ratio up to 79.6% for a gain of .1 of a point.

SALES OF PACKAGED BEER



One-way containers (up 20.2%) enjoyed all of the monthly growth as the returnable bottle continued to decline (down 5.0%). Can shipments alone rose 21.8% with part of this big gain being artificial as last-year's goal was abnormally low in the wake of forward buying. One-way bottle shipments moved up 10.0%. Cans represented 42.1% of all packaged and one-way bottles 6.3% for gains of 5.7 points and .3 of a point respectively.

To date, can shipments were up 1.2% with one-way bottles registering a .9% plus. Returnable bottles declined 2.4%. Cans increased their share of the packaged market by .8 of a point to 38.1% and one-way bottles gained .1 of a point to 5.5%.



[fol. 1223]

	Total Beer Sales		Pkgd. Beer Sales		Metal Cans		One Way Bottles		Returnable Bottles		Total Mil. Units
	Mil. Bbls.	% of Total	Mil. Bbls.	% of Total	Mil. Units	%	Mil. Units	%	Mil. Units	%	
1957											
July	9.2		7.4	81.0	985	40.0	144	5.8	1,332	54.1	2,461
August	8.5		6.8	80.0	853	38.3	161	7.2	1,224	54.6	2,244
September	6.9		5.4	78.9	652	36.3	66	3.7	1,077	60.0	1,795
October	6.5		5.1	78.0	569	33.9	99	5.9	1,012	60.2	1,980
November	5.7		4.5	78.0	471	31.9	97	6.6	908	61.5	1,476
December	6.4		5.1	78.9	582	34.8	67	4.0	1,026	61.2	1,675
1958											
January	5.9		4.7	79.1	559	36.0	75	4.8	918	59.2	1,552
February	5.2		4.1	78.2	505	37.3	67	4.9	782	57.8	1,354
March	6.3		4.9	79.2	613	37.4	90	5.5	934	57.1	1,637
April	6.7		5.3	78.9	630	35.2	97	5.4	1,064	59.4	1,791
May	8.0		6.4	79.9	802	38.2	120	5.7	1,181	56.2	2,103
June	8.6		7.0	81.7	974	42.1	146	6.3	1,197	51.7	2,317
Year, 1957	8.2		6.7	80.7	800	36.4	132	6.0	1,269	57.7	2,201
% Change	+4.0%		+5.3%	.....	+21.8%	.....	+10.6%	.....	-5.6%	.....	+5.3%
Year-to-Date											
→ 1958	40.7		32.4	79.6	4,084	38.1	594	5.5	6,044	56.4	10,722
1957	41.1		32.7	79.5	4,035	37.3	589	5.4	6,191	57.3	10,815
1956	41.8		33.0	79.0	3,909	35.8	585	5.4	6,434	58.9	10,925
% Change											
from 1957	-1.0		-0.9	.....	+1.2	.....	+0.9	.....	-2.4	.....	-0.9
from 1956	-2.7		-1.9	.....	+4.5	.....	+1.6	.....	-6.0	.....	-1.9

* Based on shipments of Cans and One-Way Bottles from manufacturers. Beer can figures converted from metal consumed into 12 oz. units; bottled shipments assumed to be 12 ounce units.

Source: U.S. Brewers Foundation, U.S. Department of Commerce, Bureau of the Census, U.S. Treasury Department, Bureau of Internal Revenue.

Continental Can Company, Inc.
Sales Control Dept.
August 25, 1958.

[Vol. 1224]

GOVERNMENT'S EXHIBIT 543

Confidential

March 25, 1952.

Beer Can Shipments

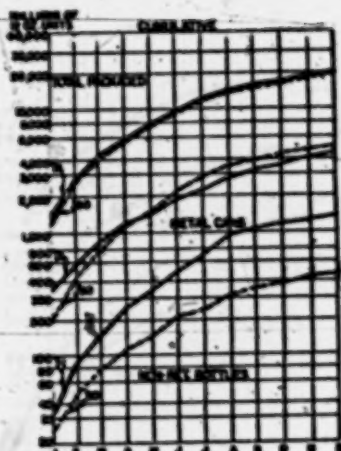
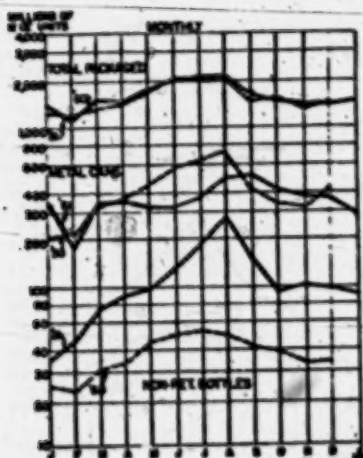
Sales Analysis Department

Packaged beer sales during January were 12.5% above January 1951 while total sales showed only a 9.3% increase.

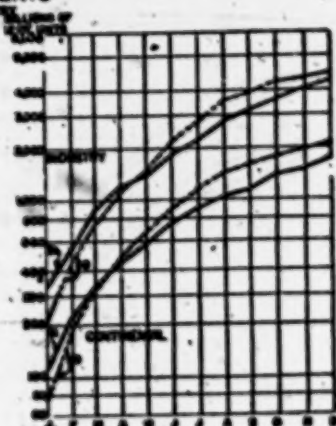
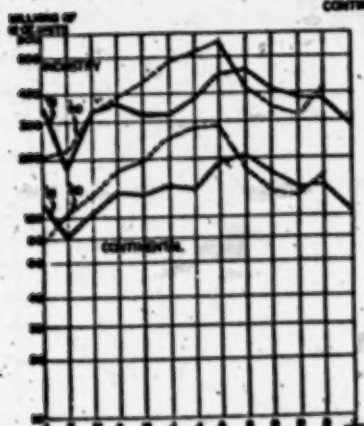
Industry beer can shipments during January totaled approximately 281 million units which was 20.4% or 72 million units below the activity level of January 1951. In contrast to the decline in can shipments which resulted from Government restrictions, January non-returnable bottle shipments increased 162.9% or approximately 58 million units over January last year.

Continental's beer can shipments during January totaled 113 million units which was 10.5% below January 1951 shipments. Continental's share of total beer can sales was 40.3% during January as compared with 35.9% during the same month last year.

PACKAGED BEER SALES



BEER CAN SHIPMENTS



NOTE: TOTAL PACKAGED SALES REPRESENT AGRAL SALES OF BEER IN ALL TYPES OF PACKAGES.

METAL CANS AND NON-MET BOTTLES REPRESENT SHIPMENT OF THESE CONTAINERS TO BREWERIES.

[fol. 1225]

Beer Can Shipments

Non-Returnable Packaged Beer vs. Total Packaged Sales

Period	Total Packaged Beer (Taxpaid Withdrawals)		Non-Ret. Bottles		Total Beer Cans		CCC Beer Cans	
	12 Oz. Units (000 Omitted)	% of Total Sales	Shipments (1) (000 Omitted)	% of Pkgd. Beer	Shipments (2) (000 Omitted)	% of Pkgd. Beer	Shipments (2) (000 Omitted)	% of Total Beer Cans
1952								
January.....	1,585,928	74.9	92,936	5.9	281,437	17.7	113,475	40.3
1951								
January.....	1,410,218	72.8	35,348	2.5	353,431	25.1	126,765	35.9
February.....	1,218,751	70.8	45,327	3.7	193,588	15.9	82,415	42.6
March.....	1,604,582	73.1	75,796	4.7	326,777	20.4	109,834	33.6
April.....	1,533,260	72.3	88,240	5.8	357,270	23.3	139,659	39.1
May.....	1,856,044	73.3	99,123	5.3	333,092	17.9	137,126	41.2
June.....	2,004,676	74.5	148,697	7.4	331,751	16.5	153,167	46.2
July.....	2,078,090	74.5	189,005	9.1	386,063	18.6	147,523	38.2
August.....	2,192,323	75.0	273,636	12.5	492,474	22.5	193,045	39.2
September.....	1,711,669	74.4	164,686	9.6	501,765	29.3	202,323	40.4
October.....	1,605,931	72.6	92,846	5.8	422,836	26.3	172,414	40.8
November.....	1,556,438	73.8	102,293	6.6	376,815	24.2	152,057	40.4
December.....	1,488,469	74.5	98,557	6.6	370,625	24.9	154,103	41.6
Total 12 Mos.....	20,260,440	73.6	1,413,556	7.0	4,446,489	21.9	1,770,461	39.8

Beer Sales and Production (BBL.)

Beer Production		Total Sales		Packaged Sales		Draught Sales	
Jan. 1952	6,966,616	Jan. 1952	6,441,519	Jan. 1952	4,823,383	Jan. 1952	1,618,136
Jan. 1951	6,872,438	Jan. 1951	5,894,396	Jan. 1951	4,288,984	Jan. 1951	1,605,412
Jan. 1952+1.4% or	94,178	Jan. 1952+9.3% or	547,123	Jan. 1952+12.5% or	534,399	Jan. 1952+.8% or	12,724

(1) Non-returnable beer bottle shipments assumed to be in 12 oz. units.

(2) Beer can figures converted from metal consumed into 12 oz. units.

Sales Analysis Dept.,
March 1952.

Beer Trends

July 9, 1948.

Commercial Research Department

The Overall Outlook—Both beer production and taxpaid sales experienced a setback during the month of May, failing to equal comparative last month and year ago figures. Unseasonal weather has been the major contributing factor, but rumors of overstocking of some distributors and retailers, as distribution pipelines gave evidence of being filled, provided some indication that current consumption ceilings were being approached.

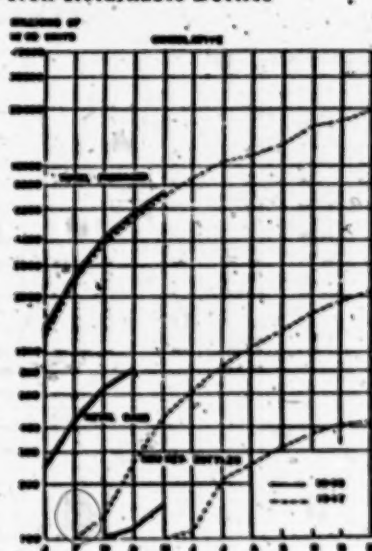
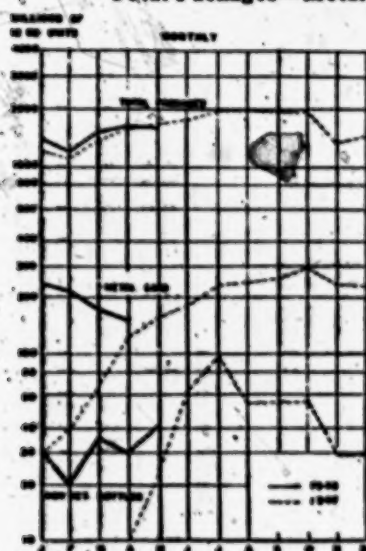
Packaged Beer Sales Total packaged withdrawals during May were 8.6% below the same month last year. However, for the 5 months to date packaged sales are 1.5% better than they were in 1947.

Non-returnable bottle shipments in May hit their peak month for this year and with a similar anticipated increase in can shipments the returnable bottle has been the package most affected by this month's sales lag.

PACKAGED BEER SALES

1948 vs. 1947

Total Packages—Metal Cans—Non-Returnable Bottles

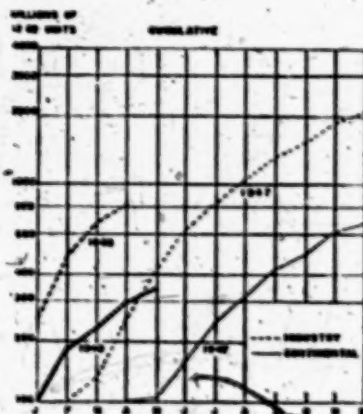
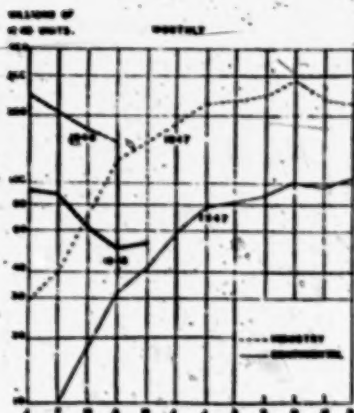


[fol. 1227] *Beer Can Shipments* Indications from Continental's May figures (Industry not yet available) are that the steady decline of beer can shipments since the first of the year has been reversed. Heavy off-season purchasing of cans in anticipation of allocations has been brought to an end, and shipments should now follow a more normal seasonal pattern.

BEER CAN SHIPMENTS

Continental vs. Industry

1947 and 1948



Beer Sales & Production (Bbls.)

Beer Production		Packaged Sales	
May 1948.....	7,264,472	May 1948.....	4,563,445
May 1947.....	7,982,847	May 1947.....	4,992,110
May 1948 -9.0% or.....	718,375	May 1948 -8.6% or.....	428,665
Total 5 mos. 1948.....	34,283,013	Total 5 mos. 1948.....	21,712,931
Total 5 mos. 1947.....	34,905,090	Total 5 mos. 1947.....	21,383,650
Total 5 mos. 1948 -1.8% or.....	622,077	Total 5 mos. 1948 +1.5% or.....	329,281
Total Sales		Draught Sales	
May 1948.....	6,551,930	May 1948.....	2,188,485
May 1947.....	7,510,628	May 1947.....	2,518,518
May 1948 -10.1% or.....	758,698	May 1948 -13.1% or.....	330,033
Total 5 mos. 1948.....	31,857,166	Total 5 mos. 1948.....	10,144,235
Total 5 mos. 1947.....	32,324,057	Total 5 mos. 1947.....	10,940,407
Total 5 mos. 1948 -1.4% or.....	466,891	Total 5 mos. 1948 -7.3% or.....	796,172

Percent of Draught and Packaged Taxpaid Beer to Total Sales

	Packaged	Draught
May 1948.....	67.6%	32.4%
May 1947.....	66.5%	33.5%
Total 5 mos. 1948.....	68.2%	31.8%
Total 5 mos. 1947.....	66.2%	33.8%

Commercial Research Dept.

[fol. 1228]

Reported Total Packaged Beer Sales

vs.

Can Industry and Continental Beer Can Shipments

Month	Total Packaged Beer-Taxpaid Withdrawals 12 Ounce Units	Total Beer Can Shipments ⁽¹⁾ 12 Ounce Units	% of Pkg'd Beer	CCC Beer Can Shipments ⁽¹⁾ 12 Ounce Units	% of Total Canned Beer
Total					
4 mos. 1947	5,389,538,352	269,767,300	5.0	63,366,500	23.5
May-1947	1,641,405,768			42,934,000	
1948					
January	1,370,903,981	250,784,400	18.3	91,223,000	36.4
February	1,211,910,439	219,070,700	18.1	88,939,000	40.6
March	1,498,982,760	183,649,000	12.3	61,435,500	33.5
April	1,656,953,817	164,068,700	10.5	53,983,500	32.9
To-date Total					
4 mos. 1948	5,638,750,997	817,572,800	14.5	295,581,000	36.2
May	1,500,460,716	⁽²⁾		58,247,000	
To-date Total					
5 mos. 1948	7,139,211,713			353,828,000	

Glass Container Industry Beer Bottle Shipments

Month	New Returnable Beer Bottles (No. of Units)	New Non-Ret. Beer Bottles (No. of Units)
Total 5 mos. 1947	787,669,056	49,681,152
1948		
January	88,812,864	32,030,928
February	79,891,920	21,492,576
March	115,771,536	36,169,632
April	56,819,088	30,262,464
To-date Total 4 mos. 1948	341,295,408	119,955,600
May 1948	55,811,088	43,873,632
To-date Total 5 mos. 1948	397,106,496	163,829,232

Source: U.S. Brewers Foundation, U.S. Dept. of Commerce Facts for Industry Repts.—"Metal Cans" and "Glass Containers."

Note: (1) Beer can shipment figures secured by converting tons of metal in beer cans reported shipped, into base boxes using 20.6 BB per ton of steel and 2.0 BB per 1000 cans.

(2) Steel Tonnage of metal consumed in shipments of beer cans by the entire industry for the month of May has not been released.

Returnable bottles reported include all sizes and are estimated to make 18.3 trips each.

Commercial Research Dept.

June 9, 1948.

Messrs. H. A. Eggerss, T. C. Fogarty, P. E. Pearson, A. M. Cameron, Sherlock McKewen, J. S. Snelham, D. C. Witzke, P. P. Wojtul, P. B. Nold, G. H. Muth, P. E. Fagan, W. P. Murray, R. L. Perin, J. F. Fenn, A. P. Jacobs, H. W. Miller, R. L. Carlton, G. P. Edmonds, G. C. Schepp, D. A. Johnson, O. G. Jakob.

Messrs. A. J. Robertson, C. M. Towne, R. S. Hatfield, R. M. Schrader, J. E. Niederhauser, W. A. Lacke, G. J. Barry, S. L. Smith, J. G. Murray, L. C. Van Hoeven, W. M. Tomkins, J. F. Price, E. R. Van Meter, R. D. Post, L. E. Hall, S. W. Hanson, S. A. Huge, B. D. Bloser, J. L. Heinlein, M. O. Roberts, J. N. Carty, F. H. Dillingham.

Beer Sales and Production

Monthly and To-Date—April 30, 1948

The following are the latest Treasury Department releases covering beer production and taxpaid beer sales for the month of April 1948 as compared with the same month of 1947, also four months to date comparisons 1948 vs. 1947.

April production was 7,380,653 barrels, which was .7 percent less than April 1947 and 5.6 percent more than March 1948. Taxpaid sales for April were 6,976,591 barrels which was .7 percent less than April 1947 and 4.1 percent more than March 1948.

Taxpaid packaged sales for April 1948 were 4,735,261 barrels or .5 percent more than April 1947 and 3.9 percent more than March 1948. For the four month period ending April 30, 1948 packaged sales were 17,149,486 barrels, or 4.6 percent more than the same period 1947.

While beer production and taxpaid sales for the month of April were lower than for the same month last year, the decrease was slight and does not materially affect the yearly trend. Both continue on approximately the same high level as during 1947.

L. E. Dake.

Allen L. Whittier:MGG

cc: District Sales Managers, District Credit Managers,
Product Sales Managers.

[fol. 1230] Beer Production (in barrels) April 1948

April 1948.....	7,380,653	5.6% more than March 1948.
April 1947.....	7,434,861	
	54,208	7% less than April 1947.
Total 4 months 1948.....	27,018,541	
Total 4 months 1947.....	26,922,243	
	96,298	4% more than same period 1947.

Taxpaid Beer Sales (in barrels) April 1948 Packaged

April 1948.....	4,735,261	
April 1947.....	4,713,375	
	21,886	5% more than April 1947.
Total 4 months 1948.....	17,149,386	
Total 4 months 1947.....	16,391,540	
	757,946	4.6% more than same period 1947.

Draught

April 1948.....	2,241,330	
April 1947.....	2,315,472	
	74,142	3.2% less than April 1947.
Total 4 months 1948.....	7,955,75	
Total 4 months 1947.....	8,421,889	
	466,139	5.5% less than same period 1947.

Total Sales

April 1948.....	6,976,591	4.1% more than March 1948.
April 1947.....	7,028,847	
	52,256	7% less than April 1947.
Total 4 months 1948.....	25,105,236	
Total 4 months 1947.....	24,813,429	
	291,807	1.2% more than same period 1947.

Percent of Draught and Packaged Taxpaid Beer to Total Sales

	Packaged	Draught
April 1948.....	67.9%	32.1%
April 1947.....	67.1%	32.9%
Total 4 mos. 1948.....	68.3%	31.7%
Total 4 mos. 1947.....	66.1%	33.9%

[fol. 1231]

Reported Total Packaged Beer Sales

vs.

Can Industry and Continental Beer Can Shipments

Month	Total Packaged Beer Taxpaid Withdrawals 12 Ounce Units	Total Beer Can Shipments 12 Ounce Units	% of Pkg'd Beer	CCC Beer Can Shipments 12 Ounce Units	% of Total Canned Beer
3 mos. 1947	3,839,780,652	140,183,000	3.7	30,051,000	21.4
April—1947	1,549,757,700			33,315,500	
1948					
January	1,370,903,981	250,784,400	18.3	91,223,000	36.4
February	1,211,910,439	219,070,700	18.1	88,939,000	40.6
March	1,498,982,760	183,649,000	12.3	61,435,500	33.5
To-date Total					
3 mos. 1948	4,081,797,180	653,504,100	16.0	241,597,500	37.0
April	1,556,953,817			53,983,500	
To-date Total					
4 mos. 1948	5,638,750,997			295,581,000	

Glass Container Industry Beer Bottle Shipments

Month	New Returnable Beer Bottles (No. of Units)	New Non-Ret. Beer Bottles (No. of Units)
Total 4 mos. 1947	567,749,664	25,284,384
1948		
January	88,812,864	32,030,923
February	79,891,920	21,492,576
March	115,771,536	36,169,632
To-date Total 3 mos. 1948	284,476,320	89,693,136
April 1948	57,232,224	30,262,464
To-date Total 4 mos. 1948	341,708,544	119,955,600

Source: U.S. Brewers Foundation, U.S. Dept. of Commerce Facts for Industry—"Metal Cans" and "Glass Containers."

Note: (1) Beer can shipment figures secured by converting tons of metal in beet cans reported shipped, into base boxes using 20.6BB per ton of steel and 2.0 BB per 1000 cans.

(2) Steel Tonnage of metal consumed in shipments of beer cans by the entire industry for the month of April has not been released.

Returnable bottles reported include all sizes and aer estimated to make 18.3 trips each.



canning

CONTINENTAL

CAN COMPANY

[fol. 1233] 2762

Continental Can Company District Sales Offices

409 Grant Building
44 Broad Street, N. W.
P. O. Box 2030
Atlanta 1, Ga.

2700 Mathieson Building
Baltimore 2, Md.

200 Berkeley Street
Boston 16, Mass.

135 So. LaSalle Street
Chicago 3, Ill.

2510 Highland Avenue
Norwood Station
Cincinnati 12, Ohio

1721 NBC Building
Cleveland 14, Ohio

325 Oil & Gas Building
Houston 2, Texas

1120 Wilshire Boulevard
P. O. Box 17577
Los Angeles 17, Calif.

110 East Wisconsin Avenue
Milwaukee 2, Wisc.

810 Roanoke Building
Minneapolis 2, Minn.

1310 Richards Building
New Orleans 12, La.

100 East 42nd Street
New York 17, N. Y.

Room 629
First National Bank Building
16th & Farnum Streets
Omaha 2, Neb.

Getty Avenue and Thomas Street
Paterson 3, N. J.

12 South 12th Street
Philadelphia 7, Pa.

2615 Grant Building
Pittsburgh 19, Pa.

Yeon Building
Portland, Oregon

Russ Building
San Francisco 4, Calif.

818 Olive Street
St. Louis 1, Mo.

1016 East Water Street
Syracuse 3, N. Y.

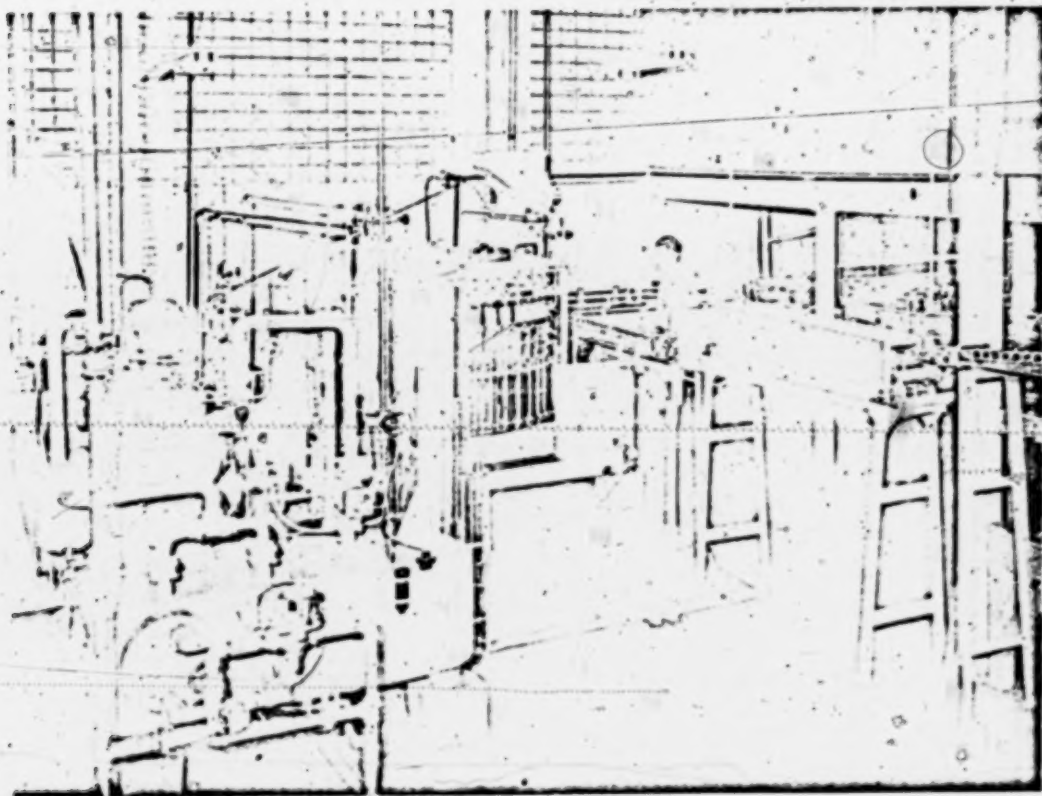
510 Lake Howard Blvd., N. W.
P. O. Box 840
Winter Haven, Fla.

The ABC's of canning soft drinks

"Soft drinks in cans—what does this new development mean to me?" That question has been asked of Continental by many people in the soft drink industry.

There is no one answer that applies to every soft drink packer. Cans, as a package for soft drinks, have gained acceptance in many markets because of the convenience they offer to packer, retailers, and consumers. On the other hand, certain technical and economic problems must be considered before adopting the new package.

We hope that this booklet will answer some of your questions, and help you to decide where cans belong in your operation. If you wish to explore the subject further, there is a Continental representative near you. He will be happy to discuss your particular problems with you at any time.



Development of the soft drink can

The soft drink can has been generally available for only a short time, but the idea of a can for this group of products is not new.

In 1935, Continental Can Company started development work on a metal container especially designed for soft drinks. Some years later, an attempt was made to package carbonated beverages in cans. This project ran up against the first big hurdle in the path of canned soft drinks—it proved impossible with materials and techniques then known, to provide a can with adequate "shelf life" for soft drinks.

Another attempt was made in 1950. This time a much improved can showed promise of providing adequate shelf life, and was marketed with some success. However, restrictions of the Korean war and economic conditions made it hard for any disposable package to compete with returnable bottles. This situation curtailed plans for expansion; only one soft drink canning plant remained in operation.

By 1953, the circumstances had changed. Consumers were accustomed to products packaged for convenience in handling and use. Supermarkets,

much expanded since World War II, were selling more and more soft drinks; the problem of handling deposits and empties was proving a costly one for them.

Recognizing this opportunity, one enterprising concern reintroduced soft drinks in cap sealed cans. Others followed in the flat top style. Canned soft drinks were given a good reception by consumers, and aroused much interest throughout the bottling industry. This year, of course, as more cans have become available and market demand has increased, many soft drink brands have entered the canning field.

What are the chances of continued, and increasing, success for canned soft drinks? We think that they are favorable. Public demand among the take-home trade for the convenience features of the can is established. Many retail outlets are enthusiastic about handling soft drinks in cans. Cans themselves are available in adequate quantities. Technical improvements have been made in can structure, linings, and manufacturing methods. Continuing research promises further progress along these lines.

Container requirements

A package for soft drinks must meet certain specific requirements. The container should be made of materials capable of holding the product under considerable pressure. Yet these materials must not affect the wholesomeness or flavor of the beverage. The container should be light in weight, but able to withstand comparatively rough handling during packaging and shipment. It must be a sanitary container that can be filled easily and sealed faultlessly at a high rate of speed. It should be an economical method of packaging soft drinks.

Types and sizes of soft drink cans

Two types of cans are presently being used for packaging soft drinks: cap sealed and flat top cans. The cap sealed can with a cone top and crown closure is somewhat similar to the soft drink bottle; the flat top can is much like the present beer can.

Cap sealed cans for soft drinks are made in 6-, 12-, and 32-ounce sizes. The flat top style is available in the 12-ounce size for carbonated products, and in several sizes for still drinks.

Can-making materials

To produce a container which will protect the quality of soft drink products, the can manufacturer must make judicious selection and use of can-making materials. The soft drink can is made of the best tin-coated steel plate available.

The cans and ends are lined on the inside with two or more coats of can-lining materials to guard the taste, appearance and wholesomeness of the contents. The first coat is usually applied in the flat before the can body is formed. The second coat is applied after the can has been fabricated. These materials are carefully selected to make sure that they do not impart any off-flavor to the particular beverage being packaged in the can.

A decorative label (in the design and colors selected by the packer) is lithographed on the outside of the can by the can manufacturer, thus eliminating the labeling operation in the packer's plant. The exterior of the can and ends are further protected by one or more applications of a protective material.

Can structure

Carbonated beverage cans must withstand the maximum internal pressure developed by the product during storage. This internal pressure may be as high as 140 pounds per square inch, corresponding to five volumes of carbonation at 110°F.

To meet these requirements, the side seam and ends of the can must perform satisfactorily under the maximum pressure conditions anticipated. Side seams having outside soldered tabs were designed specifically for use on carbonated beverage cans. Types of side seams used increase the overall strength of the container and prevent the seam from opening, even under critical storage conditions.

Sealing the container

Another major requirement of a container for soft drinks is that it must be able to be filled easily and sealed faultlessly at a high rate of speed.

The cap sealed can and the bottle are crowned in a similar manner, on the same kind of machinery, and with approximately equal efficiency.

The flat top can is closed in an entirely different manner; a closing machine is employed to attach the covers to the cans. This is done by means of

a double seam made air-tight by the use of a sealing material.

Other qualities of the soft drink can

In addition to meeting specific requirements, the metal container possesses many qualities considered advantageous for a package for soft drinks.

Soft drink cans stack easily and may be stored in a minimum amount of space — whether it be in the packer's warehouse, in transit, on the retailer's shelves or in the consumer's refrigerator.

The cans are also light in weight, effecting a considerable saving in distribution costs.

The lithographed can is colorful and lends itself to the most attractive shelf display.

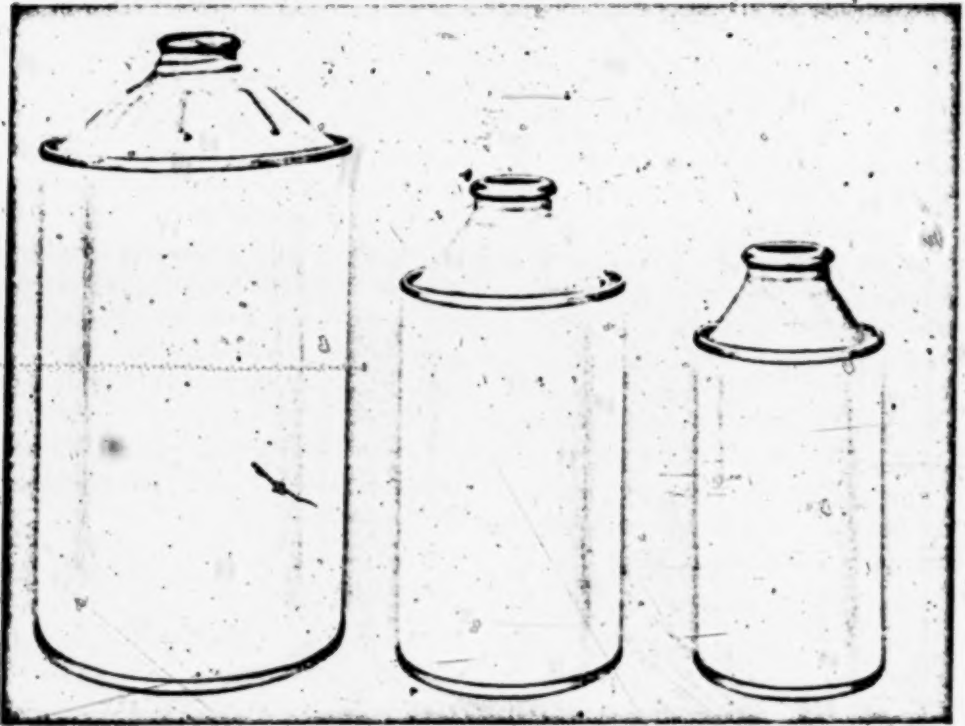
Sturdy and easy to handle, it will not break even under extremely rough handling.

There are no deposits or handling of "empties" by the retailer. The soft drink can is used once and then thrown away.

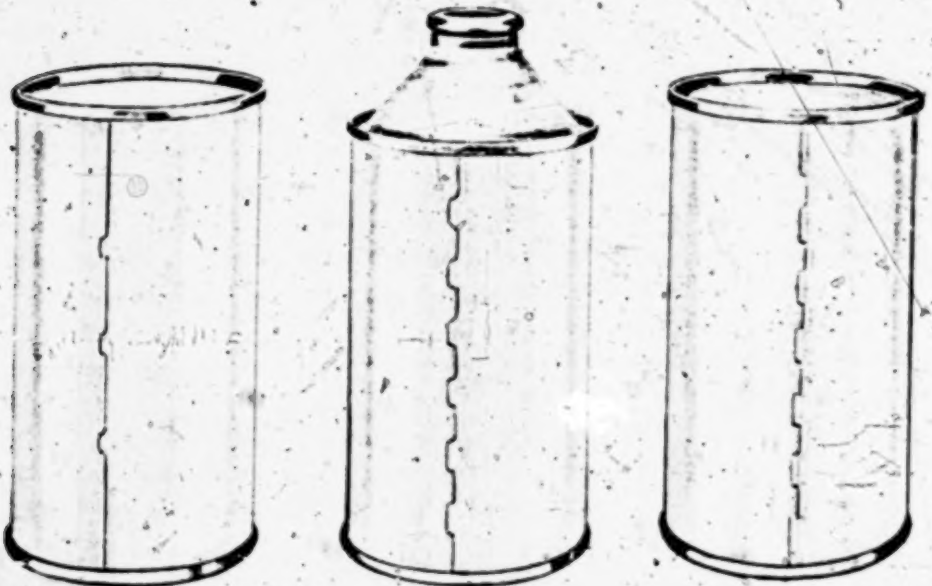
In addition, the can offers the consumer many convenience factors. It chills rapidly in the refrigerator, eliminates storage and subsequent return of "empties" to the retailer.

[fol. 1239] 2768

Three sizes of Cap Sealed cans — 32, 12, and 6 ounce.



Six seams for carbonated beverage cans must be specially designed to resist internal pressures.



Economics of soft drinks in cans

The consumer advantages of the can for soft drinks command a premium retail price in most markets, offsetting the slightly higher costs of this package. Prospective canners should investigate all cost factors to evaluate profitable use of the metal package in their market.

Costs will vary in every case, and "typical" comparisons are often misleading. The following factors should be considered in each individual cost analysis.

Containers — While returnable bottles are less expensive than cans or throw-away bottles, care should be taken to include an adequate allowance for replacement and obsolescence. Cans normally cost about $3\frac{1}{4}$ cents each for either style, compared to $2\frac{3}{4}$ to 3 cents each for one-way 12 ounce bottles.

Crowns — All packages except flat top cans use crown closures.

Labels — Labels must be included in analyzing bottle costs when color-applied labels are not used. Cans are lithographed and do not require labels.

Cases — Cost of cases will vary with style used. Returnable wooden cases are normally used with returnable containers. These cases are expensive ini-

tially, and require maintenance; however, being returnable, the cost can be spread over several trips.

One-way reshipping cartons are usually used to deliver cans and one-way bottles to the packer, and to carry the filled containers to the retailer.

Contents — There is no significant difference between the cost of ingredients for 12 ounces of a canned product and the same quantity packed in other types of containers.

Filling and packaging — Filling and packaging costs will depend upon the speed of each filling line, the number of people employed, and prevailing wage rates. In this respect, cans usually cost less. Sorting, washing, and inspection of returned empties is avoided. Can lines often operate at considerably higher speeds, allowing more output per employee.

Storage and handling — Empty and filled, cans are lighter and take less space. Thus, handling and warehousing costs will favor cans. Cans may be ordered as needed. There is no necessity to store large quantities of "empties" during the off-season.

Distribution — When store-door deliveries are made, cans normally prove easier (and therefore less costly) to

handle, since they are lighter and take less space. More cans may be placed on a single truck.

There is no need to sort, pick-up, or refund deposits for empties. Thus, each stop takes the driver less time.

The no-return feature of cans permits the central warehouse deliveries desired by many grocery chains. This method of distribution is low in cost, as many cases are delivered at a single point.

When shipping long distances, the weight and space-saving features of cans reduce the freight bill considerably.

Retailing—Cans require less shelf space and may be stacked more easily. Thus, they prove easier for the retailer to store and handle.

Cans need not be re-handled as empties.

To achieve an equal net profit, most large retailers state that a smaller gross markup is acceptable when selling soft drinks in cans.

Investment required—Syrup room, water treating equipment, and many other facilities of a normal bottling

plant are equally suitable for canning. Filling and closing equipment, however, must be replaced or converted if cans are to be substituted for or alternated with bottles.

Approximate costs for typical installations are about as follows:

	New Filling Line	Conversion from Bottle Line
Glass Bottle line	\$160,000	—
Flat Top Can line	130,000	\$90,000
Cap Sealed Can line	100,000	20,000

Exact costs will of course depend upon equipment at hand, plant layout, and other factors. The above figures are intended only to be a general indication of outlay involved.

Amortization of the investment made is properly figured as a cost in analyzing various packages.

Total cost, retail price, and market

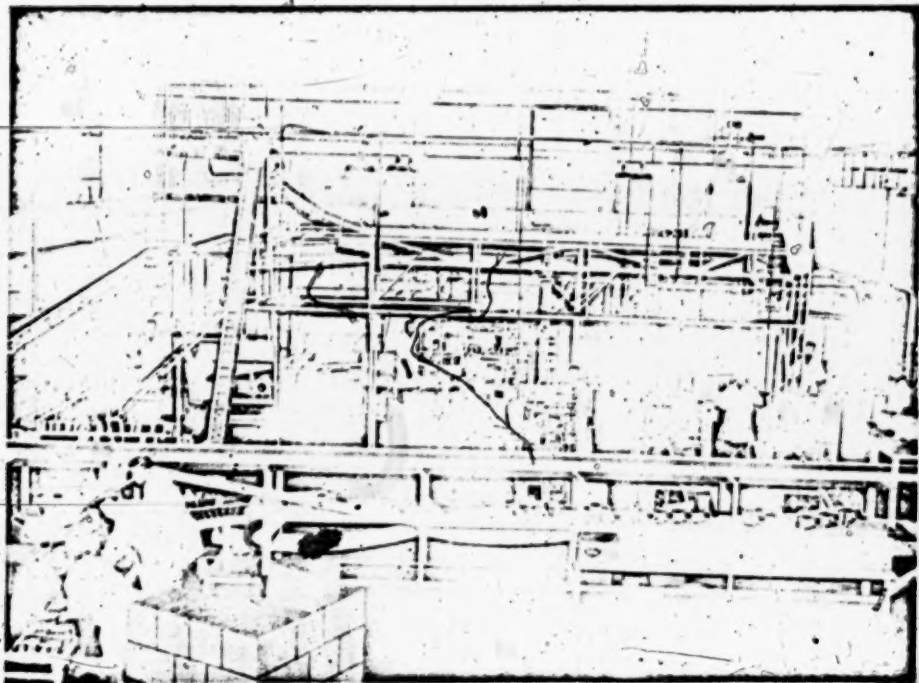
— Each of the above factors contributes to the total cost chargeable to each type of package. Together with an allowance for overhead and profit for packer and distributor these costs establish a logical retail price at which the product should be sold.

Canning procedures

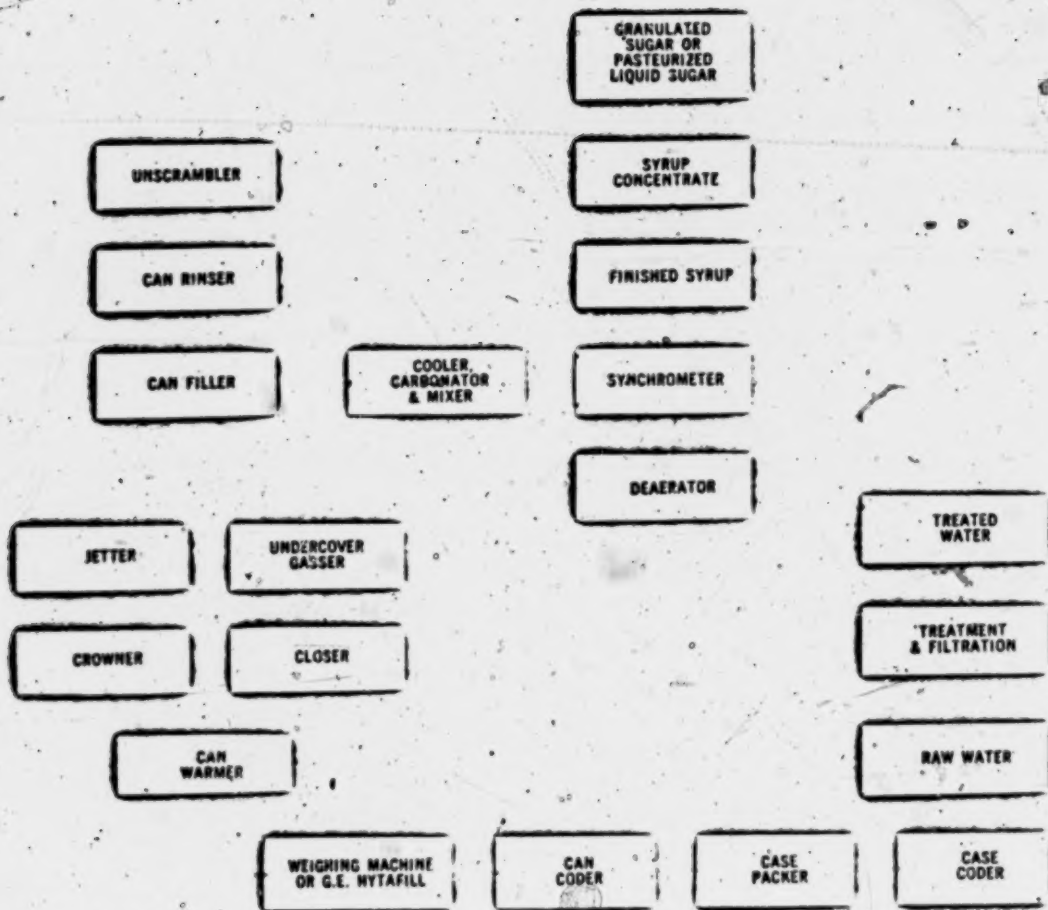
The techniques of canning and bottling soft drinks are quite similar. Therefore, the adoption of cans by the beverage industry presents few new problems as far as preparation and handling of the product are concerned.

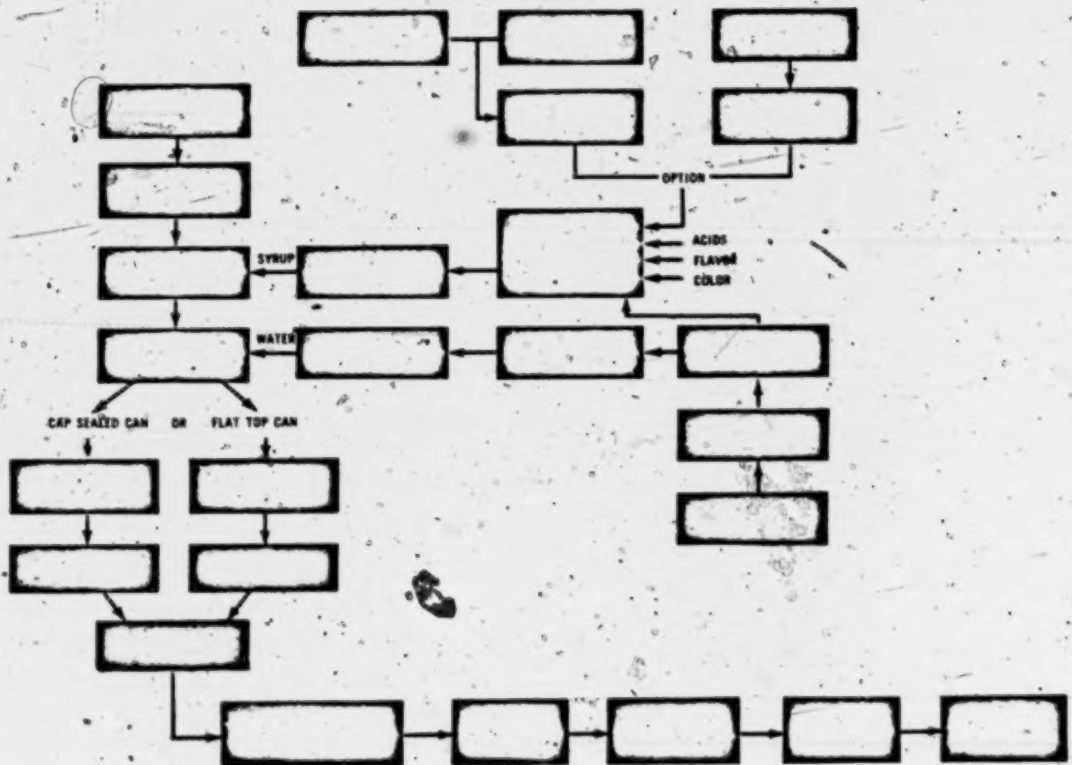
The product for canning may be pre-mixed, or made by syruping and then adding carbonated water—the way

most soft drinks are prepared today. The equipment used in the pre-mix or syruping systems of product preparation for bottling can also be used in canning. Thus, it is possible for a bottler—converting to cans or packing alternately in cans and bottles—to use his present water-treating, syrup-making, cooling and carbonating equip-



General view of a soft drink canning operation.



Typical beverage **canning** line - syruping system

ment. When packaging the beverage in the cap sealed can, the bottler can even use the same filling and crowning machinery.

The principal differences between the bottling and canning operations lie in the handling of the containers before and after filling. Cans for carbonated beverages are usually received in re-shipper cases. Cans go first to the can unscrambler which orients the cans for conveying through the rest of the equipment. (Empty cases are belt-conveyed to the case packer.)

Since cans are not re-used, bottle soakers, washers, etc. are not required. However, prior to filling, the cans are spray rinsed. While being conveyed to the filler, the washed cans then make a series of twists and turns to facilitate drainage of wash water.

Syruping equipment and fillers are essentially the same for both bottles and cans, although special modifications may be necessary to adapt existing equipment to handle flat top cans. As in bottling operations, a specific amount of syrup is placed in the can and carbonated water is added on top of the syrup, by the filler.

Precautions must be taken to minimize the amount of air dissolved in the product. Excessive air content may have a harmful effect on the product and may also lead to reduced shelf life. On the cap sealed line, as the cans leave the filler a "jetter" injects a small amount of CO_2 or product into the top of the beverage in the filled can. The foaming action produced removes the air from the headspace. On the flat top line, air is removed from the headspace by displacement with CO_2 gas from an undercover gasser on the closing machine.

The filled cans then move directly to a machine for closing. With minor modifications, the same equipment used for crowning bottles can usually

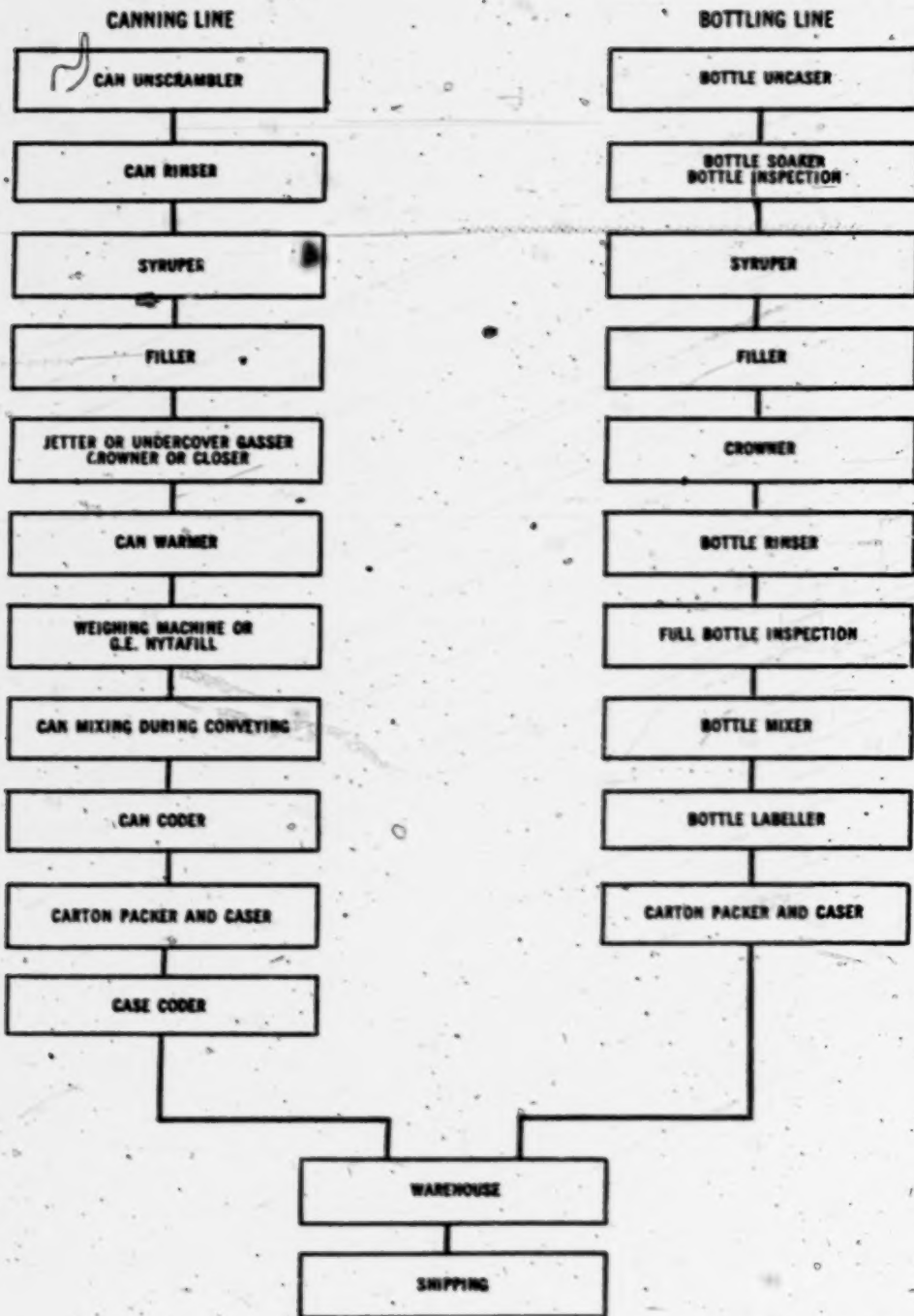
be used for crowning cap sealed cans. However, crowning adjustments must be made carefully when cans are run to be sure that the crowning operation will produce an efficient seal without deforming the nozzle.

Filled flat top cans move directly into the closing machine or double seamer which attaches the cover to the filled can. These closing machines are engineered to operate at high speed—300-500 cans per minute—and are designed to accommodate cans of various diameters and heights.

The closed cans—cap sealed or flat top—are passed through a can warmer which raises the temperature of the can and product a few degrees above room temperature. This is done to prevent condensation of moisture on the otherwise cold surfaces of the cans and provides enough heat to dry the cans.

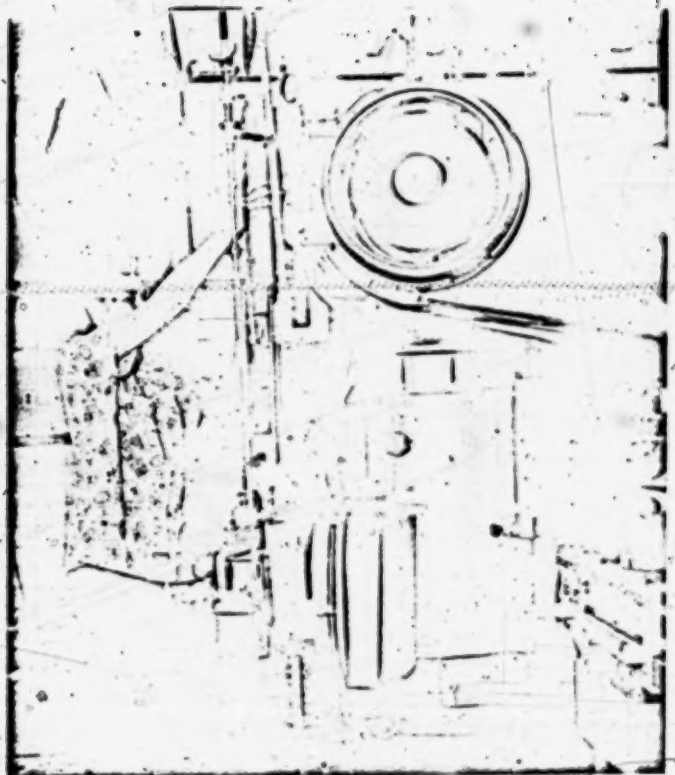
When the syruping system of packing is used, the cans must be subjected to a mixing treatment to insure thorough blending of the syrup and carbonated water in the container. In the bottling line this is accomplished in the bottle mixer, whereas, in canning it is usually accomplished by passing the filled cans through a series of twists and turns in the conveyor system.

The cans are conveyed through a weigher or fill checker which automatically rejects underfilled cans. In a canning line, a labeller is not required as the cans are lithographed. However, a coder is used to provide identification for each can before casing. Coded cans travel to the casing unit where they are packed, and the cases glued and sealed automatically. Filled cases are coded, again placed on pallets and are now ready for warehousing or shipment. Coding the case enables the canner to market the canned soft drinks in chronological order, thus eliminating unduly long storage for any particular lot.

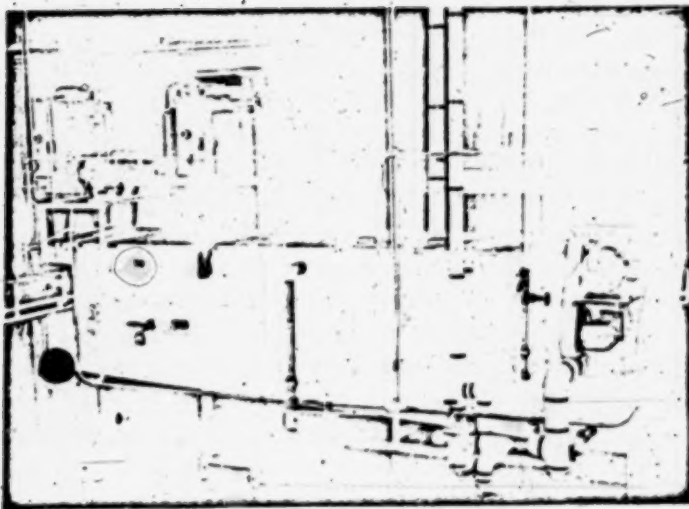


2776

[fol. 1247]



Closing machine for seaming lids on flat top cans.



A typical can warming device

Questions about canned soft drinks

Question. Cans have had some success to date. However, distribution has been limited. Does this mean that cans are only a "fad"?

Answer. General industry opinion is that cans are here to stay. We believe that the advantages of metal cans as a package for soft drinks will gain increasing acceptance in the soft drink market. In evaluating this year's results it must be remembered that cans are a new package to soft drink packers, retailers, and consumers. Many well-known brands are not yet available in cans. Promotion and distribution methods are not firmly established. These limitations are not necessarily permanent, but they do restrict can sales at this time.

Question. What features of the can command the premium at which canned soft drinks are often retailed?

Answer. The can is a "convenience" package—light in weight, unbreakable, easy to carry and store. Cans chill quickly. It is not necessary to return "empties". These features appeal to today's busy housewife.

Question. What share of the soft drink market will canned soft drinks eventually garner, in your opinion?

Answer. It is difficult to estimate the ultimate share of the market that the can will hold. This year about 33% of packaged beer is in cans. The soft drink and brewing industries are not exactly comparable, however. We would expect a lesser use of cans for soft drinks for some years to come.

Question. How many of the present soft drink canners use the can as their sole package; how many of them also

produce glass-packaged soft drinks? What do you see as the future pattern in this respect?

Answer. Some soft drink canners today use only the metal package. Perhaps a greater number are also active and successful bottlers. Most concerns now considering use of the can are already established in the soft drink industry. Interest on the part of "outside" companies is at present very limited.

Question. Has any interest been shown in soft drink canning by the large canned food producers?

Answer. There has been some general interest in canned soft drinks among some packers of other canned foods. A few have done contract packing for others. This interest has, to our knowledge, not matured to a point where a food packer is producing soft drinks under his own label, however. Despite the apparent parallel between the canning of soft drinks and of perishable food products, food canning equipment is generally unsuitable for carbonated beverages. In addition, technical people trained for food operations are not necessarily expert soft drink producers. Marketing of canned foods entails a different sales and distribution set-up from canned soft drinks. Perhaps most important, the peak production seasons of most perishable crops coincide with the period of heaviest soft drink consumption.

Question. Do you believe that canned soft drinks will ever be competitive, price-wise, with bottled merchandise?

Answer. The economies of a returnable package will maintain the deposit

bottle's price edge for some time. However, because of its many advantages, we believe the can will compete effectively, even at a slightly higher price.

Question. For the picnic users or the casual buyer will not the "No Return Bottle" serve as well as cans?

Answer. The two packages do not possess the same advantages. The can is unbreakable, light in weight, takes less space, and chills quickly. Some consumers are accustomed to discarding cans but to saving and returning bottles even if no deposit is due. The experience of the brewing industry has been that cans will outsell non-returnable bottles by a large margin when both are priced to reflect actual costs.

Question. Which can style, Cap Sealed or Flat Top, is preferred?

Answer. At present the brands are about equally divided between Flat Top and Cap Sealed (cone top) cans. Until recently cap sealed cans have been in short supply. Briefly, the advantages of each style are as follows:

Cap Sealed	Flat Top
Easier to open (especially for children)	Less costly
Easier to drink from	Easier to stack
Less costly to convert bottling line to cans	Take less space
Withstand greater internal pressure	

The above factors have resulted in an apparent consumer preference for the cap sealed can, to some extent offset by a retailer preference for the flat top.

Cost-wise, the two cans alone are about the same. However, use of the cap sealed can is more expensive by the value of the crown closures, approximately $4\frac{1}{2}\epsilon$ per case.

Question. A year ago, when canned beverages first appeared, there was a limited supply of cans for those pro-

ducers who wished to enter the field. If there was a "scarcity", it seems to have disappeared. Are there more can manufacturing lines in existence today?

Answer. The shortage of cans for soft drinks has eased because there are more manufacturing lines in production today. We and other can makers will have still more equipment available prior to the next peak season.

Question. To the bottler, what additional costs are involved in setting up a canning operation?

Answer. The most significant costs in setting up a canning operation are those necessary to equip to fill and close cans. A bottling line may be equipped to handle cap sealed cans part time or full time for about \$20,000. A complete new canning line for either can style will cost around \$100,000-\$130,000. New can lines can run at 400 or more cans per minute.

Existing syrup room, water treating system, and other facilities may be used with either cans or bottles.

Personnel of the bottling line can be trained quite readily to handle cans.

Question. Is it possible to develop can liners for every soft drink flavor? If not, please explain.

Answer. Our engineers believe that research now in progress will lead to improved liners suitable for those products which are now most difficult to pack in cans.

Question. How much carbonation can be safely used in canned beverage products today?

Answer. This depends on the size and style of can. In general, the cone top can may be used for higher carbonation than the flat top and in the 12-oz. size may carry up to 5.0 volumes of CO_2 at normal peak storage temperatures.

Question. Is the "shelf life" now possible with cans too limited?

Answer. The shelf life possible with each product to be canned is determined, prior to packing, by careful tests.

Cans are sold by Continental only for products which can be held in good condition for the normal maximum interval between filling and consumption.

Question. Would you suggest that distribution of canned soft drinks be handled through food brokers or the packer's own delivery force?

Answer. The individual canner must select his own method of distribution. Packers using only cans, and without established sales organizations, have used brokers. Established bottlers, adding a line of canned soft drinks, have usually relied on their own distribution set-up, because of the coverage and "push" it affords at the retail level.

Question. Will the big canner be able to ship canned soft drinks economically from central plants to all parts of the country?

Answer. Despite the expanded markets possible with the lightweight can, large central canneries may have difficulty shipping great distances and retailing their products at a price competitive with local operators. The nature of the beverage industry differs somewhat from beer in this regard, and while canners may tend to have more centralized operations than bottlers they are likely to find it hard to absorb heavy freight costs, or to merchandise their product without local sales and promotion effort.

Question. It has been reported that dealers, while preferring the "convenience" of the can, are beginning to

resent the smaller profit margins this item allows them. How can this be met?

Answer. We have not noticed any widespread resistance to "smaller profit margins" by retailing organizations who have measured costs carefully.

Such organizations seem to feel that a package that is easier to handle, such as the can, requires a lesser mark-up to yield the same net profit.

They therefore judge each package on its contribution to net profit per unit sold, not on the percentage margin possible. So judged, we have heard little criticism of the can at present price levels.

Soft Drink canners can sell their product by emphasizing these "facts of business life".

Question. Is there any great saving either for the packer or the grocer in using non-returnable containers, that is, in the cost of handling?

Answer. Studies have placed the cost of handling returnable bottles in supermarkets at as high as 25¢ per case, although these costs are difficult to measure. Judging from the enthusiasm of most chains for non-returnable packages, it is apparent that they foresee considerable savings in their use. Each bottler's cost must be calculated individually, but obviously there is some expense in the collection, storage, and washing of returned containers.

Question. What are the principal tenets of establishing and operating a successful soft drink canning enterprise?

Answer. Soft drink canning is basically no different from any other business. A can is no magic guarantee of success. A good quality product must be produced at reasonable cost, and merchandised aggressively if the canner is to be successful.

[fol. 1251]

GOVERNMENT'S EXHIBIT 600B

Continental Can Company, Inc.

Internal Memorandum

To: Location #43—Head Office

Attention Mr. M. M. Dukehart, Jr.

From: Location #43—Head Office

Date: May 26, 1953

Subject: Potential Market for Soft Drinks in Metal Cans

The forthcoming introduction of soft drinks in metal cans in the New York area by Cantrell & Cochrane again raises the question as to the potential place for metal cans in the very large soft drinks field. Two prior market tests (the Canada Dry test and the Pepsi-Cola promotion of 1950) provided little conclusive evidence as to whether the metal can will ultimately capture a significant place in packaging soft drinks. There are, however, enough significant new elements in the C&C promotion that the prospects for a successful invasion of the soft drinks field now appear very hopeful.

Total bottled soft drink (carbonated beverage) consumption in the United States is about *23 to 25 billion bottles* (all sizes). This is slightly larger than the packaged beer total of around 21 billion packages. Although growth since pre-World War II has been very substantial, in recent years increases have been little more than in proportion to population growth. Per capita annual consumption runs about 150 to 160 bottles, or about 525 to 550 bottles per household.

The extent to which metal cans could penetrate this tremendous market is, of course, not predictable at the present time—the big unknown being the untested acceptance of consumers. Other unpredictable factors will also influence the relative success of the forthcoming C&C venture (and other future similar attempts) but experience with the Pepsi Cola experiment, and even more, the brewing industry's experience with selling packaged beer in cans, offer some useful clues as to the potential metal can volume we may expect in soft drinks.

Assuming that the merchandising factors are favorable

and that the product quality is well received, the upper limit on market acceptance will then be determined by *price*. Detailed analysis of the market for canned beer presently indicates that about a 30% share of the market can be captured by cans where the competing bottled package retails in the vicinity of 15¢. In this price range the net cost of the can to the consumer is, under favorable conditions, about 2¢, or only about 13% of the price. This is after allowing for some production, shipping, and handling cost savings in relation to the bottled product. However, the realizable penetration which theoretically could be gained by cans—which in effect are a premium package—appears to go down geometrically as the retail price decreases. Where the retail price of the packaged product is around 10¢, the sales potential for cans would be very much lower, possibly about 10% of the total sales volume.

As the retail price goes below 10¢, the potential for cans is probably even further reduced because the net cost of the can to the purchaser approaches 40% of the retail selling price of the bottled package, where the latter sells at a price of around 5¢. In the Pepsi-Cola test it appeared, for example, that a minimum level of 2% could be maintained for cans. Under the more favorable conditions foreseen for the 6 oz. can to be used by C&C, a penetration of 5% appears more likely.

On a *conservative basis*, therefore, the potential for cans in the soft drinks field can be approximated—on a very rough basis—as indicated in the following table. Also underlying these estimates is the assumption that product quality and merchandising effectiveness are sufficient to gain and sustain a level of consumer acceptance.

[fol. 1252] Estimated Minimum Penetration for Metal Cans for
Packaged Soft Drinks

	Total	Small Size	Medium Size	Large Size
		(Mainly 6&7 oz.)	(Mainly 12 oz.)	(Mainly 28 oz.)
Est. 1953 Soft Drink Sales (Billions of Bottles) . . .	24.0	18.0	3.5	2.5
Coca-Cola	12.0	12.0	...	...
Other Soft Drinks . . .	12.0	6.0	3.5	2.5
Est. Can Penetration . . .		2-5%	10%	...
Est. Can Requirements (Millions of Cans)	700-1,250	350-900	350	...

The Cantrell & Cochrane Venture

There are certain plus factors present in the C&C program which add substantially to the likelihood of success as compared with earlier unsuccessful ventures.

1. Since there does not already exist a bottled product of the same company against which the cans must compete, there is a natural fundamental incentive to push the C&C product in cans, and not to treat it as a secondary package as would be the case with an established bottling company.
2. There are potential economies of production possible with a central canning plant which would not be possible with smaller, decentralized local bottlers.
3. The distribution channels selected should be much more effective for the canned C&C product than was the case in earlier ventures. Almost all chain food store operators in the New York-Metropolitan area have been sold and are reportedly enthusiastic about the possibilities of this product. Furthermore, food wholesalers—a new channel for soft drinks—will be used to effect distribution. This is a plus item for food wholesalers and they will have an incentive to push it. Their usual margins are less than those obtained by beverage wholesalers but will be more favorable than for most other products handled by food wholesalers.
4. There is a special appeal for children (largest consumers of soft drinks) with these two new packages, and in our opinion this should be particularly true of the 6-ounce size. Not only is the package itself very attractive and convenient, but the non-breakable feature should provide an advantage with parents of younger children.
5. The C&C line of products in cans will not compete with the same brand—especially an economy brand—in bottles. Thus there will be less tendency on the part of consumers to compare the price in one kind of package versus another.
6. Since 1950, when an adverse price relationship more than any other one factor killed the Pepsi-Cola-in-cans experiment, prices of soft drinks have risen

enough that a canned soft drink will be less at a disadvantage in terms of price.

[fol. 1253] There are also, however, some limiting factors which must also be considered.

1. The C&C brand is unknown and will have to be sold, regardless of the packaging feature. This should not be a serious obstacle, however, because it is doubtful that brand preference is very strong in soft drinks (except for Coca-Cola), and the disposable can—a new package—offers a natural merchandising feature to stimulate trial purchases.
2. The C&C soft drinks in cans will be generally at a price disadvantage which is bound to limit sales wherever potential consumers are economy minded. Since this is a critical factor, it is discussed in more detail in the attached call report.
3. The shelf life of the product, to our knowledge, has not as yet been completely tested. If technical difficulties on this score should arise, the C&C venture may run into some temporary setbacks, although it is expected that ultimately such technical problems can be satisfactorily overcome.

Actually the big *if* in this forthcoming test is the element of consumer acceptance on a *sustaining* basis. It will, of course, be observed carefully by other companies in the soft drinks field, and even a reasonable success this season is likely to bring other companies into the field before the 1954 season. The merchandising, advertising, and promotion program of C&C appears to be sound, and a budgeted advertising expenditure at an annual rate of \$600,000 (equivalent to about \$5,000,000 on a nationwide basis) is bound to generate a substantial volume of sales, at least in the earlier part of the season when the promotional effort is at its peak.

In order that we may be adequately informed as quickly as possible about the extent and development of consumer acceptance for the C&C product, we have arranged to obtain the results of a series of surveys which will be conducted for the Cantrell & Cochrane organization. The details of this program are covered in the attached call report.

As information becomes available, we will provide you with further reports which we hope will prove helpful in preparing to meet future can requirements.

The equipment program of three new lines for each size, as outlined in your letter of May 19th, appears at this time to represent about the minimum which should be committed by Continental in preparation to meet 1954 requirements. There is some question as to whether production will be needed at St. Louis in 1954, but we believe that the lines should be available in 1954, with ultimate location to be decided later. Top priority should be given for the cone and bottom dies, waxing equipment, and side seam tools for the 6 oz. lines in order that existing 202 diameter lines at other locations could be used for 1954, since the new lines may not be available in time for the peak season.

If the C&C venture is only moderately successful in the New York area (about 10% of the U.S. market) this year, it is still likely to draw other companies into the field, and 1954 will probably see C&C and other companies extending the use of cans toward nationwide distribution. Thus, 1954 could be a critical year for Continental to make the most of what shows promise of being a sizeable new market for metal cans.

D. H. Walker.

DHW:KF

Copies: Messrs. P. P. Wojtul—#43, R. G. Fisher—#43, W. K. Neuman—#43, R. L. Perin—#98, W. P. Murray—#98, J. I. Donahue—#122.

[fol. 1254]

GOVERNMENT'S EXHIBIT 601

August 7, 1953.

#43—Head Office
Mr. C. H. Buckley

Market Survey Data for Soft Drinks in Metal Cans

Re: Cantrell & Cochrane

Yesterday, the writer called on the Ted Bates Advertising Agency in order to secure and discuss the latest statistical data from the market surveys being conducted by that

agency in conjunction with the introduction of Cantrell & Cochrane soft drinks in the metropolitan New York market.

Briefly, the results to date can be described in total as very favorable, and the survey data are now beginning to be somewhat indicative of what the actual results at the end of the summer season seem likely to be. Specifically, the two continuing tests now being conducted indicate the following thus far:

Sample Survey of Market Penetration

Starting with June 2 and each two weeks thereafter, a sample telephone survey has been conducted, to determine the approximate percentage of total soft drink purchases in the preceding seven days represented by C & C beverages. These telephone checks were made in the five boroughs of New York and were based, in each case, on about 800 to 900 interviews. The results through August 3 are shown in the following table (which must be treated as confidential).

Trend in C & C Share of Purchases

	June 2	July 7	July 20	August 3
Interviews	855	877	789	840
Purchasers*	472	501	446	456
Total Units Purchased	5,747	6,308	6,081	4,949
% of Total Purchases				
Canada Dry	9.2	5.8	6.4	
Hoffman	9.4	11.8	11.4	
Pepsi	21.1	18.5	18.8	
Coca-Cola	25.2	25.9	23.6	
Miscellaneous	32.5	34.7	36.5	
C & C	2.6	3.3	3.3	6.9
<hr/>				
% Repeat	1.7	1.4	1.3	2.7
% Cans	150	208	203	342

* Purchased soft drinks in the preceding 7 days.

Note: No further checks are now scheduled until August 31.

[fol. 1255] I would like to caution that the rather spectacular results in the August 3rd check are subject to question, and the penetration percentage (6.9) should be considered as having a potentially important sampling range of error. It is significant that the trend in C & C share of purchases is up and also that the percent of repeat purchases is up, but the number of cans purchased by respond-

ents in the sample is still relatively very small. Two factors may have contributed to the very sharp rise in the C & C percent in the latest week: (a) total soft drink purchases during the preceding seven days were sharply reduced, partly due to the fact that the weather was generally cool during that period; and (b) during the two weeks preceding August 3rd an intensive drive was conducted to get distribution of C & C beverages into the independent stores. It does appear likely, however, that a consistent C & C percentage share of the market could exceed 5%, although these early returns are by no means conclusive, mainly because the "curiosity" phase has not been passed and it is impossible yet to estimate a sustaining percentage based on repeat purchases.

Store Check Analysis by Flavor and Can Size

Since May 20th a continuing analysis of sales to the stores in the Shopwell Food Chain has been conducted. These stores have been used as a test operation in which store stocks are controlled so that at all times each flavor and each can are fully stocked and displayed. Sales by flavor and by can size in these stores thus reflect, on a sample basis, a quick measure of the popularity of each flavor and of the two can sizes. The latest available figures are shown in the following table:

C & C Soft Drink Sales
Shopwell Food Stores
May 20—July 27

Flavor	12 ounces (cases of 24)	6 ounces (cases of 48)
Coola	850	310
Root Beer	840	310
Ginger Ale	550	255
Grape	550	265
Club Soda	175	
Total Cases	3,065	1,140
% of Total	72.9%	27.1%
Total Cans	73,560	54,720
% of Total	57.4%	42.6%

[fol. 1256] Sales of Coola are good, but are not showing the strong lead that was hoped for, and ginger ale and club soda have been very disappointing in proportion to expected results. On the other hand, root beer has been surprisingly strong and grape has sold better than expected.

The 6 ounce size is holding up surprisingly well, sustaining a ratio of better than 2 cans for every 3 12 ounce cans sold, in the test stores. However, this can be very misleading as a representation of the over-all popularity of the 6 ounce size since many stores other than Shopwell (especially large volume super markets) are refusing to stock the 6 ounce size. The results do show that the 6 ounce size will sell where stores are willing to stock it and display it, but we cannot ignore the apparent fact that many large volume, rapid turn-over store not only dislike stocking both sizes but feel that they get a better margin by selling only the 12 ounce size.

Consumer Acceptance Survey

Because survey results to date are very difficult to assess in terms of actual product acceptance by consumers, and also because the ginger ale and club soda in particular are showing up relatively poorly compared with the root beer, the agency is moving up its plans for a consumer acceptance survey. In order to obtain as early as possible detailed information about consumer acceptance of the products, a home interview survey is to be undertaken during August instead of, as formerly planned, in September. These interviews will be conducted in approximately 1,000 homes, and tabulated results should be available late in September.

This survey should provide the kind of information which we urgently need in order to assess the potential for canned soft drinks. I recommend therefore that we wait for results of this study rather than conduct one of our own at this time. If this survey later proves to be inadequate, we will still have the opportunity to conduct our own survey.

It may, for example, indicate how consumers feel about *product quality* and whether (as we suspect) reports of low carbonation of ginger ale and club soda—and perhaps the Coala also—might be limiting the success of this introduction of soft drinks in cans.

D. H. Walker.

DHW/ml

cc: Messrs. T. C. Fogarty, P. P. Wojtul, W. K. Neuman, R. G. Fisher, R. L. Perin, W. P. Murray, J. I. Donahue.

[fol. 1257]

GOVERNMENT'S EXHIBIT 612

Continental Can Company, Inc.
100 East 42nd Street
New York 17, N. Y.

December 13, 1954.

Attitude of Grocery Chains Toward Canned Soft Drinks

Since super markets, particularly those affiliated with large chains, appear in theory to be excellent outlets for canned soft drinks, Continental has discussed this subject with marketing executives at the headquarters of several well known chains to determine their attitude towards the metal package.

The opinions expressed by the chain executives were quite uniform, with only limited differences based on geographic location or size of chain.

It is apparent that a non-returnable package, particularly a can, is of great interest to these stores because it will eliminate the costly handling of returned bottles, and because it permits them to accept the deliveries at a central point rather than at each individual retail outlet. The chains are thus enthusiastically behind canned soft drinks.

The opinions they have expressed on various aspects of this situation are outlined below. You may find this information of value in discussing the problem with soft drink packers.

Attitude of Chains

The chains we contacted were universally in favor of increasing the use of cans for soft drinks. In this respect they differ from the smaller retailers, who are less enthusiastic. In some instances, chains have actually eliminated returnable bottles from some or all of their stores, and we feel most would like to see this trend continued as soon as it becomes practical on a wider scale.

Chains report no particular consumer objection to the can as such, although they do point out that the new package is hampered by a higher price, and the fact that few "name" products are available in cans.

Products Packed

Several chain executives pointed out that the prestige of cans for soft drinks would increase greatly if a name brand such as Coca Cola were packed in metal. At present in many areas no well established brand is available in cans, and there is some consumer feeling that the can is suitable only for the lesser known products.

[fol. 1258]

GOVERNMENT'S EXHIBIT 613

Continental Can Company, Inc.
100 East 42nd Street
New York 17, N. Y.

March 4, 1955.

A. New Look at Soft Drinks in Cans

The summer of 1954 saw wide acceptance of the metal can as a soft drink package. The merits of the can proved of interest to certain packers as a means for increasing their sale of soft drinks; metal containers demonstrated advantages over other packages in certain distribution channels and with many groups of consumers.

While the introduction of cans was in general received favorably several obstacles to further growth were apparent. These included the following:

- (1) Some packers visualized the can as a threat to their established bottling business, while others hesitated to accept it believing that no-return packages were a fad and would be discontinued.
- (2) Can specifications available last summer were unable to provide adequate shelf life for some products, or to protect the quality of some others.
- (3) Supply of cans was short, especially in the early months. The range of sizes and styles available was restricted.
- (4) Because of some of these conditions many con-

sumers gained the impression that top quality soft drinks were not available in cans.

For 1955 Continental has developed a program which we believe answers many of the problems that became evident during the past season.

We now offer containers and services to back them up, to assist the soft drink industry in selling more of its products.

Experience to Date

The convenience of no-return packages is becoming more and more apparent to the purchasers of soft drinks, and to those engaged in producing and distributing them. The growing use of no-return bottles, and more recently of cans, is estimated below:

Year	No. Return bottles (millions)	Cans (millions)
1949.....	7	-
1950.....	24	-
1951.....	26	-
1952.....	64	-
1953.....	126	70-80
1954.....	138	450-500

[fol. 1259] These figures show a dramatic rate of growth, demonstrating the fact that for many consumers the advantages of a no-return package outweigh the few additional pennies per case involved.

Nor is this trend peculiar to the soft drink industry. Almost 40% of packaged beer is already sold in no-return bottles or cans. The deposit milk bottle is fast giving way to the wax paper carton. These shifts are accelerated by the growing use of self-service in stores, the increased cost of labor necessary to handle return packages, and improved consumer living standards which include "convenience" items.

Not only does the busy housewife benefit from elimination of the chore of collecting and returning bottles, but the retailer avoids the nuisance of buying and selling bottles at no profit, the distributor has no collection worries, and the packer has no capital tied up in empty bottles stored in someone's kitchen.

The immediate future is likely to see an increasing demand for no-return packages.

How does the can stand compared to other non-returnables? The figures above answer that question. Although the can has been on the market only a very limited time, estimated soft drink can shipments exceeded shipments of non-returnable bottles by almost 4:1 in 1954.

The can has achieved this position because of advantages inherent in metal containers.

- (1) *The can is light in weight.* For instance, a 12-oz. Pepsi-Cola bottle weighs $15\frac{3}{4}$ ozs., a 12-oz. can $2\frac{1}{2}$ -ozs. A 10-oz. Dad's Root Beer bottle weighs $14\frac{1}{2}$ -ozs., a comparable can less than $\frac{1}{5}$ as much. A 6-oz. Coca Cola bottle weighs 14-ozs., a 6-oz. cap sealed can only about 2-ozs. This weight saving means a saving in freight costs.
- (2) *The can takes less space.* For instance a 10-oz. flat top can takes 41% less space than a comparable returnable bottle. The 12-oz. cap sealed can takes 35% less space than the 12-oz. Pepsi bottle, and the 6-oz. cap sealed can takes 51% less space than the Coca Cola bottle. These space savings mean that more cases can be placed on a truck, stored in a warehouse, or held in reserve in the supermarket's back room.
- (3) *The can is faster to fill.* Production savings are realized by filling cans at up to 400 per minute, compared to much slower speeds typical of glass bottle filling lines. Even when existing equipment is converted to cap sealed cans the speed of the line is often increased because the washer-soaker is no longer needed.
- [fol. 1260] (4) *Cans are easier to handle.* Not only are cans lighter, and less space consuming, but they are unbreakable as well. In addition, there are no empties to collect, sort, inspect, and wash prior to use.
- (5) *Cans are better to display.* Cans are more readily stacked than bottles. Colorful lithography contributes to impulse buying. Most important, the space saving features of cans result in tremendous

economies in shelf space, very important to super-market operators.

All of the above advantages work for those who must make a profit from the sale of soft drinks—the packer, distributor, and retailer. The advantages of cans to the consumer—less space in the refrigerator, chill quicker, no returns, unbreakable—are too familiar to require repetition.

It would appear that the growing use of cans for soft drinks is on a sound footing, and can be expected to continue.

Can Specifications for 1955

In the past there has been some criticism of the can as a package for quality soft drinks. Some packers have claimed that the shelf life provided for their products was inadequate. Others have stated that contact with the metal of the can affects the taste or appearance of the soft drinks they pack. Some consumers have held the impression that canned soft drinks were of low quality.

Up until now most of the cans available for soft drinks have been modifications of cans developed primarily for other purposes. This year, however, Continental offers both cap sealed and flat top cans made to specifications developed especially for carbonated soft drinks. These specifications answer many of the criticisms previously raised.

For cap sealed cans we have added the following features:

(1) Compound Lined Nozzle Curl

A layer of E-4 compound has been placed inside of the nozzle curl of the cones of cap sealed cans. This compound seals off the exposed cut edge of metal which occasionally has come in contact with the product and resulted in added iron pick-up.

(2) Filleting Compound

A special compound has been adopted for use in the top and bottom double seams. During double seaming this compound squeezes out into the crevices normally existing between body and end, pre-

venting abrasion of the enamel at this point, and shutting off the double seam area from the product. Ends with this compound can be expected to show zero metal exposure at the double seam, a point at which soft drink cans were occasionally susceptible to failure.

[fol. 1261] (3) New Inside Side Stripe

An improved material has been adopted for the inside-side stripe on capsealed cans. This material is less permeable than those previously used; its use reduces metal exposure at this critical area.

These improvements are being adopted on virtually all of our cap sealed lines for this summer. Commercial quantities of cans of the new specification are already available from our Clearing #5 plant.

Our flat top can for soft drinks has also been completely remodeled. Since it was not as resistant to high pressures in 1954 as the cap sealed can, it has been necessary to make a somewhat greater number of modifications.

(1) High Pressure End

The contour of the end has been altered, to withstand pressure equivalent to that developed by 4.0 volumes of carbonation at 110°F.

(2) New Side Seam

A 6 tab interrupted lock and lap side seam (STK-415) has been adopted. This side seam increases resistance to bursting, and gives greater manufacturing latitude in providing a good solder fillet, which is essential if metal exposure is to be held down at the side seam area.

(3) Filletting Compound

This new development is used on the flat top can also.

(4) New Base Enamel

An Epon type base enamel has been adopted. This new material contributes to reduced metal exposure.

(5) New Side Stripe

A new side stripe is being used for the flat top can.

Cans made to these new specifications are especially designed for soft drinks. The improvements permit the packing of a wider range of products and carbonations. In addition, greater shelf life is provided for many of the products already packed, and product quality is more completely protected within the container.

Availability of Cans

In contrast to last year, we have plenty of manufacturing capacity available for most sizes of soft drink cans. Additional lines were installed during 1954, and more are going in this spring. With the exception of the newest sizes, there should be no limit to our ability to meet reasonable demands of the industry.

[fol. 1262] Continental is the only major can company supplying both styles of container. Thus prospective canners have a greater flexibility of choice, and are assured of more objective recommendations, when dealing with us. In addition, we are prepared to furnish a wide variety of sizes, to permit packers to offer the size package most desired in their market, and most adapted to their price structure.

The following cans will be available:

(1) Cone Top

6-oz.—202 x 311	(Body Height)
9-oz.—202 x 503	" "
12-oz.—211 x 407.5	" "
32-oz.—312 x 600	" "

(2) Flat Top

10-oz.—207.5 x 413
12-oz.—211 x 413
16-oz.—211 x 604

The 6-oz., 12-oz., and 32-oz. cap sealed cans and the 12-oz. flat top were used in important quantities last year and are readily available for 1955.

Sufficient equipment has been ordered to make limited quantities of 9-oz. cap sealed cans by early summer. Thus market tests of this size can be made in the near future; if demand warrants it will be possible to equip more lines to make this can.

The 10-oz. flat top can will be made available at locations to be determined after actual users have been identified.

The 16-oz. beverage can will be available from any plant now making 16-oz. beer cans. For immediate delivery we are able to supply cans holding up to about 3.0 volumes of carbonation at 110°F. Given approximately 3 months notice, we can provide tooling to make a can holding up to 4.0 volumes under similar conditions.

This range of styles and sizes, available in substantial quantities, gives Continental's customers a selection unmatched by any other supplier. This can be a particularly good selling point in dealing with larger concerns who have not yet decided upon size, style, or supplier.

Thus our "new look" reveals a favorable market for soft drinks in cans. To help the packer exploit this opportunity Continental can provide:

- (1) Top quality cans.
- (2) A choice of style and sizes.
- (3) Available in quantity.

[fol.1263] Our technological advances and increased production facilities "load the bases" for our customers.

For the means to "drive home the runs" for them we refer you to the summary of our Soft Drink Can Advertising and Sales Promotion Program.

SBS/m

C. H. Buckley.

[fol. 1264]

GOVERNMENT'S EXHIBIT 617

From: C. H. Buckley

March, 1956.

Mr. L. A. Carey
#43 Head Office

The Economics of Cans for Soft Drinks

The greatest obstacle to the progress of the soft drink can is the cost of the package. Admittedly, the can is a convenience package for which the consumer must pay a premium price. When given the opportunity to buy a canned soft drink of established quality in a can, however, the consumer has demonstrated his willingness to pay a price which will allow the packer and the retailer a fair profit.

In order to obtain a clear picture of the economics of adding a can line to an established bottling operation, we have analyzed operations where the can has been added successfully as a supplementary package to a bottle line with good consumer acceptance.

Based on the cost data obtained from these actual operations, we have made a comparison of the relative costs of a case of 24 10-oz. bottles and a carton of 24 10-oz. flat top cans. The attached table shows a typical packer's cost set-up. While these cost figures could not be applied directly to a particular packer's operation, they do provide a factual basis for determining the cost relationship of the can and the bottle.

The costs shown in the attached table have been developed in considerably greater detail and we can discuss them more specifically with any packer who is interested. The attached summary should be fully adequate in most cases, however.

Only two items in the packer's costs should require explanation. The container cost per trip for the returnable bottle is one item which very few, if any, packers really know. The figure we use is a very conservative one. It represents only actual out-of-pocket expenses for bottle and case replacement or repair over a long period, divided

by the number of cases actually shipped during that period. No charge has been made for the large capital sum which is tied up in bottle and case inventory. Our estimate of this cost item could very well be understated by several cents per case.

The cost of distribution is another item which will vary widely from one place to another. In this case we have used the same figure for both returnable bottles and cans. This was done because in some areas delivery crews are paid on a weekly basis and do not receive overtime pay. In most instances, however, time spent picking up empty bottles will add to the delivery cost and the cost of delivering cans will be significantly lower than the cost of delivering bottles and picking up empties.

[fol. 1265] On the basis of this study, then, we arrive at a cost to a bottler-canner of \$1.43 per carton of 10-oz. cans compared to a cost of about 80 cents for a case of 10-oz. bottles delivered to the retailer. This leaves a difference of 63 cents between the two packages. Because of our treatment of the container cost and distribution cost items, this difference is probably overstated by as much as five cents.

Thus, a packer could price his canned product at about 60 cents per case above the price of his bottled goods and realize the same profit per case without any capital investment in the containers. What that price would be would depend on the prevailing bottle price in the particular market. However, a price of \$1.20 for bottles and \$1.80 for cans would represent a very satisfactory level.

If the retailer adds the same per case markup to cans that he does to bottles, the retail price per can will end up at 2.5 cents more than the bottle price, excluding the deposit. Ideally, we would like to see the can price held at a level equal to the price of the bottle plus deposit. This would mean that the retailer would have to accept a markup of half a cent per can, or 12 cents per case, less for canned soft drinks than for returnable bottles.

No retailer will deny that handling deposit containers is a nuisance and involves an additional cost to him. Virtually none, however, have any clear idea as to just what it does cost them to handle empty bottles and deposits. Actually, the cost will vary very widely from store to

store, depending on the volume involved and the method of handling. In the case of the small owner-operated store the cost is probably entirely one of additional time and effort rather than a monetary one. In the case of the chain super-market, however, empty deposit bottles being returned in rush hours, as they usually are, involve both costly labor and a nuisance which cannot be evaluated in terms of pennies.

We have made a survey of a number of large super-markets in an effort to put a dollar-and-cent figure on the cost of handling returnable bottles. Because of the manner in which this problem is handled by the stores, a scientific time study was not practicable. In lieu of this we questioned the store managers regarding the volume of soft drink sales and the hours their employees devote to redeeming and sorting returned bottles. In some instances the cost was quite apparent as most of the work was done by part-time help hired for just that purpose. In other cases the cost was more difficult to arrive at as the job was done intermittently by regular employees.

We could not arrive at any one figure which could be used generally, because no two operations are identical. But we did find this: some store managers estimated their cost of handling return bottles at as much as 20 cents per case; the lowest estimate obtained was ten cents per case. Probably 15 cents per case would be a fair average overall; in any event it is quite certain that most retail stores spend at least twelve cents per case on this task.

This means that any retailer can sell cans at the same price as returnable bottles (including the deposit) and make the same profit per case with less labor and nuisance if the difference in his cost is 60 cents per case. The packer, on the other hand, can sell his canned product at 60 cents per case more than his bottled product and make the same profit per case with no capital investment in returnable packages and a much simpler operation in his plant.

[fol. 1266] Unfortunately, there is a great deal of misconception today regarding the profitability of the can. In some markets the prevailing bottle price is so low that the packer cannot make a fair return. In such areas the

can will not be able to yield a fair return either unless the price differential is greater than the actual difference in cost between the two packages. In other cases retailers use soft drinks as "loss leaders" to build store traffic. If canned beverages are to compete in such markets, they too must be priced at an unprofitable level. In other words, the can cannot develop substantial profitable volume in a market where either the packers or the retailers are maintaining returnable bottle prices at an unprofitable level.

We know that canned soft drinks can develop substantial volume when they are marketed as a supplementary package to a bottle line at a retail price equal to the price of the bottle plus deposit. At this price level, the can will return the same profit per case to the retailer and the packer as the returnable bottle. And it has been proven time and again that the can will produce *extra* volume and *extra* profits for the bottler who adds it to his line.

Such major brands as Nehi, Dr. Pepper, Cott, Mason, Hires and Graf have demonstrated the profitability of the can to their own satisfaction. We have the facts and figures to discuss this with any other bottler who is interested in adding to his sales and profits by opening the door to a new market by adding the can to his product line.

While the figures we have used here are for 10-oz. containers, they can readily be converted into other sizes to fit any particular case. For the most part, a change in container size will affect only the cost of the container itself and the contents.

[fol. 1267]

Comparison of Costs

Bottles vs. Caps for Soft Drinks

Item	Per Case of Bottles (24-10 oz. Bottles in Wooden Case)		Per Carton of Cans (24-10 oz. Flat Top Cans in Carton)	
	Description	Cost/Case	Description	Cost/Carton
A. Container Costs	1. 10-oz. Bottles and Cases	.1055	1. 10 oz. Flat Top cans	\$.748
	2. Crowns	.041	2. Carton	.054
		Total \$.146		Total \$.802
B. Beverage Ingredients	Flavor Concentrate, Sugar, Carbonated Water		Flavor Concentrate, Sugar, Carbonated Water	
		Total \$.30		Total \$.30
C. Receiving Labor	1. Unloading & Storing Sugar, Crowns, Concentrates and Misc. Supplies		1. Unloading & Storing Sugar, Crowns, Concentrates and Misc. Supplies	
	2. Unloading Empty Cases of Bottles from local Delivery Trucks		2. Unloading from Freight Car Cartons of Empty Cans & Placing in Storage	
		Total \$.005		Total \$.004
D. Mixing Room Labor		Total \$.005		Total \$.005
E. Direct Labor	1. Based on Line Speed of 175 Bottles/Minute with Crew of 10 at Rate of \$1.25/hour	\$.0324	1. Based on Line Speed of 325 cpm with Crew of 9.5 at Rate of \$1.25/hour	\$.0154
	2. Bottle Separation	.0124		
		Total \$.045		Total \$.015
F. General Labor		Total \$.005		Total \$.005
G. Spoilage		Total \$.010		Total \$.011
H. Distribution	Delivery, Sales, Advertising, & Promotion		Delivery, Sales, Advertising, & Promotion	
		Total \$.200		Total \$.200
I. Depreciation		Total \$.010		Total \$.010
J. Overhead & Fixed Costs	1. Administration, Taxes, Insurance, Fuel, Maintenance, etc.		1. Administration, Taxes, Insurance, Fuel, Maintenance, etc.	
		Total \$.075		Total \$.075
Total Costs.....		\$.792		\$1.427

[fol. 1268]

May 1957

FOODS MERCHA

CANNED FOODS MEET HIGHEST QUALITY STANDARDS

Because of canning, the retail store of today offers its customers a world of products — available in any town, at any time of the year. Pineapple from Hawaii, salmon from Alaska, sardines from Maine, mushrooms from Pennsylvania, pimientos from Georgia — all these and some 500 other canned foods are within arm's reach and at a price everyone can afford.

Yet, consumers are seldom aware of the quality standards set for the canned foods they take for granted.

WHY STANDARDS?

Why do we need canned food standards? To make it easier for everyone to buy exactly the kind of product he wants. For example, each can of fruit cocktail contains the same kinds of fruit. The *Standard of Identity* limits the use of the name "Fruit Cocktail" to that definite mixture of fruits. Of course, one also wants to buy canned foods of reliable quality. The *Standard of Quality* requires that every can meet an established Quality Standard. One expects a can or jar to be full. The *Standard of Fill of Container* ensures a properly filled package.

ARRIVING AT STANDARDS

How do we get food standards? Drafting of standards is a joint Government-industry enterprise. The Federal Food law provides that standards may be established whenever they will promote honesty and fair dealing in the interest of consumers.

The first canned food standards were simple definitions of products, established by the U. S. Department of Agriculture before the passage of the first Pure Food Law in 1906. As the canning industry developed, there was desire for more complete standards. In 1930 the canning industry added to the Pure Food Law the McNary-Mapes amendment providing for a minimum standard of quality and fill of container for canned foods. But the establishment of these standards was handicapped by the lack of a precise definition for each canned food. So, into the new Food, Drug, and Cosmetic Act of 1939 there was written a provision for the formulation of mandatory standards for identity, quality, and fill of container not only for canned foods but for most processed foods in package form.

NCA ACTIVITIES

Foremost among the industry groups working for the highest quality standards is the National Canners Association, this year celebrating its 50th anniversary. Through its divisions, NCA is active in research, labeling, home economics, etc.

Its *Raw Products Bureau*, for instance, has helped agricultural specialists redesign many fruits and vegetables to improve their quality. It acquaints canners and growers with the latest findings on useful agricultural and

canning procedures. It encourages the development of new machinery and keeps track of work done in pest control, soil fertility, irrigation and plant breeding.

FIRST IN RESEARCH

NCA was the first trade association to establish research laboratories, since it has always been their aim to assure, for the mutual benefit of the industry and the public, the best food that scientific knowledge and human skill can employ.

As far back as 1922, NCA made nutrition news by publishing the first study on the vitamin content of canned foods. During the past fifty years many similar contributions have helped NCA members achieve their goal of better quality. Today NCA laboratories in Washington, Berkeley and Seattle employ more than 50 scientists and technicians to do research on projects dealing with quality improvement in canning, such new techniques of preservation as atomic radiation, and many other technological programs.

LABELING

Clearly written, informative can labels have become a canning industry feature partly because of the work of the National Canners Association's Labeling activities. They help canners prepare label copy that will give shoppers complete information on the product inside the can in easily understood language. Since most people shop in self-service stores, it is the can label that answers their questions about the product. Members of the NCA staff work continuously to find just the right words to describe each canned product precisely and honestly. Information always includes the complete name of the product, the net weight of the contents, and frequently offers suggestions on product preparation.

CONSUMER SERVICE

NCA's *Consumer Service Division* gives its attention to product use and recipe development for both consumers and institutions. This is NCA's closest link with consumers because it gets right to the point — how to make the most of the many canned foods they buy. Editors and broadcasters regularly receive recipe information suggesting new and varied uses for canned foods, and illustrating how such products can be put to work in the kitchen for a maximum of convenience, economy and good flavor. Teachers, home economists and people who run institutional kitchens get educational material giving the latest nutritional facts on canned foods and advice on appealing ways of preparing them for large numbers of people. Canners get recipe ideas for their labels.

These various activities are but a few of the ways NCA is contributing to higher standards for canned foods. They are certainly the reason for the fact that there are now some fifty different canned foods for which standards have been established.



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Double Value. What do customers like better than a bargain? Another bargain! That's why this display of pork and beans at Verscharen's Food Market in Pittsburgh goes over so big. The product is multiple-priced and wrapped—eight to a package—in a re-usable polyethylene bag. Shoppers not only save money but take home a serviceable plastic bag free of charge. Owner Henry Verscharen says that many of his customers, who normally buy no more than two or three cans at a time, thought so much of this offer that they took home the eight-unit package. The bags can be used for many jobs around the house—storing fruits and vegetables, holding dampened laundry or for wrapping and protecting silverware. If you'd like further information about these attractive, useful bags, write the Shellmar-Betner Flexible Packaging Division, Continental Can Company, Mount Vernon, Ohio.



Ladies Cheer for Beer. Be ready for warm weather with plenty of canned beer displays. But, don't concentrate on just the men. Your women shoppers will buy a lot more beer, too, if you aim some of your promotions at them. For instance, try a display like this "dinner idea" used at an Associated Food Store in Flushing, N. Y. Their simple sign suggestion gets the point across.

CANNED FOODS *Merchandiser Digest*

NUMBER 36

CONTINENTAL CAN COMPANY, 100 E. 42nd ST., NEW YORK 17, N. Y.

AUGUST 1957

SELLING MORE CANNED SOFT DRINKS

Story on Page 2

CANNED BEVERAGE

SHOWCASE.

At Ralph's Market in Downey, California, this middle-aisle display introduces a busy shopper to canned soft drinks and chalks up an impulse sale. Like most of your customers, she takes time to examine special displays because she knows they are a showcase for interesting new products as well as money-saving values.



START CANS

MOVING. Since most shoppers go directly to the

CANNED SOFT DRINKS MAKING HIT WITH SHOPPERS

Hundreds of millions of canned soft drinks are being sold this year — their popularity is growing fast! However, many of your customers have yet to try this new product. Start cashing in on the extra profits and convenience that canned carbonated beverages offer you by convincing shoppers to buy that important first can. After that, the quality and taste they find inside will keep them buying.

Play up these features in your displays, advertising and point-of-sale material: Canned soft drinks chill quickly; they take up less space in the refrigerator; there are no empties to return and no deposits required. They're safe for the children to handle — can't chip or break. Follow the example of these retailers and start promoting canned soft drinks now!



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START CANS

MOVING. Since most shoppers go directly to the soft drink section for their favorite beverages, this Pennsylvania supermarket makes sure that the new canned variety gets equal shelf space with bottles (photo left). On one shelf, space has been conserved by putting small cans in front of taller bottles and a large area has been set aside for family-size cans on the bottom. Multiple pricing is also used to start cans moving (photo right). Although many canned beverages don't come in multiple packs, shoppers usually buy more than one at a time and appreciate the saving.



BOTTLERS, RETAILERS, SHOPPERS. GETTING ON CANNED SOFT DRINK BANDWAGON

Although a comparative newcomer to the popular, highly profitable canned goods line, canned soft drinks are rapidly outgrowing their baby pants. Their acceptance by bottlers, retailers and consumers continues to increase as each group realizes the benefits of these easy-to-handle, easy-to-serve beverages.

A recent article in "Food Processing" magazine shows just how great an impact canned carbonated beverages are having on overall soft drink volume.

For instance, the magazine states that of the leading soft drink processors, 19 out of 28 are now using cans to some extent. These firms include such well-known names as Coca-Cola, Pepsi-Cola, Canada Dry, 7-Up, Soda Hires, Dr. Pepper, Cott, Mission Dry, Hoffman, Chequoke Club, White Rock and Mason.

Nebi Corp., the No. 1 U.S. canner, reports that 1956 can sales exceeded 1955 by 50%. Shasta Water Company, a West Coast bottler, reports that sales for the year preceding their change to cans were \$844,000. Present sales are more than \$2 million. And, results achieved by a promotion-funded franchiser in North Carolina shows an increase in total can sales of 98% in 56 over 55 in a 19-city area.

Bottlers were not the only ones to benefit from the switch to canned soft drinks. Retailers, too, reported amazing increases. The "Food Processing" article cites an AXP survey of 19 of its outlets in Charlotte, North Carolina, to prove this. The survey reveals that canned soft drink sales increased 150% in 1956 over 1955 while sales of bottled beverages rose only 6% during the same period.

Not only do cans help the retailer improve his soft drink sales, but they also promise to help him solve the serious problem of rising costs in the handling of returnable empty bottles. According to one recent handling costs study, the average retailer gross profit on a case of bottled soft drinks ranges from 20 to 28 cents. But, the average gross profit on a case of canned soft drinks ranges from 32 cents to 41 cents. The per case profit on the bottled drinks is reduced an average of another 12 cents by the handling costs.

Favorable consumer reaction to canned beverages is based on a number of factors. Foremost among them is the willingness to pay for the convenience represented by canned beverages—they're easy to use, easy to store, cannot break or chip, they take less space in the refrigerator, chill more quickly, and are safe for the children to handle.

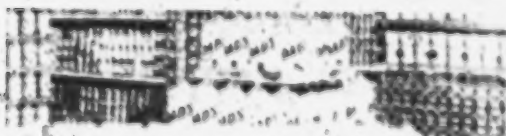
The future of canned beverage looks extremely bright. Indications are that during 1957 canned carbonated beverages will be more actively promoted than ever before.

During the last few generations, huge mass markets have opened for hundreds of canned products. Just as they have become a part of modern living, so, too, will canned soft drinks. Retailers can speed the process and their profits by playing up their canned soft drink line.

Remember, the idea of canned soft drinks is new to many of your customers. Give these beverages more—and better—display space. Feature them prominently in your ads and point-of-sale material. If bottles and cans are given proportional place in the market, cans will bring plus sales.



SUMMER FAVORITE. There's nothing so welcome on a sultry day as the refreshing pick-up of an icy cold soft drink. More people every day are discovering that their favorite flavor in a can chills quickly and takes up less refrigerator space. For greater sales—and more profits too—be sure the leading variety of flavors and keep some chilled for extra customer convenience.



SIZING

SAMPLES AID SALES.

To introduce canned soft drinks, the Food Land Market in Seattle, Washington, arranged for a demonstration from local can bottlers to pass out free samples. The drinks were served from a ice box set up for the purpose. Notice that a milk display of canned beverages was set up in the demonstration so that shoppers would be tempted to buy on the spot.



PLEASE, ALL TASTES.

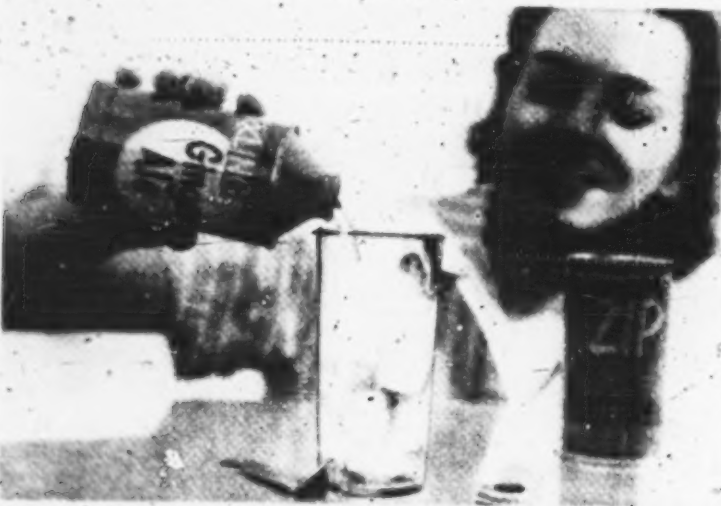
Variety is the key here. This display of canned soft drinks is easy to set up and packed for quick removal.



For instance, the magazine states that of the leading soft-drink processors, 19 out of 25 are now using cans to some extent. These firms include such well-known names as Coca-Cola, Pepsi-Cola, Canada Dry, 7-Up, Nehi, Hires, Dr. Pepper, Cott, Mission Dry, Hoffman, Clicquot Club, White Rock and Mason.

Nehi Corp., the No. 1 U.S. canner, reports that 1956 can sales exceeded 1955 by 50%. Shasta Water Company, a West Coast bottler, reports that sales for the year preceding their change to cans were \$544,000. Present sales are more than \$2 million. And, results achieved by a promotion-minded franchiser in North Carolina shows an increase in total can sales of 98.5% in '56 over '55 in a 19-city area.

Bottlers were not the only ones to benefit from the switch to canned soft drinks. Retailers, too, reported amazing increases. The "Food Processing" article cites an AAP survey in 19 of its outlets in Charlotte, North Carolina, to prove this. The survey reveals that canned soft drink sales increased 280% in 1956 over 1955 while sales of bottled beverages rose only 66% during the same period.



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SIZING UP

SALES. Here's a sure sign shoppers go for canned soft drinks in a big way. Foodland Markets in Dearborn, Michigan, is pushing full quarts of canned root beer — via stacks of cut-away cases, given their own floor space. If consumers go for this large size you can bet they go for soft drinks in cans.

Favorable consumer reaction to canned beverages is based on a number of factors. Foremost among them is the willingness to pay for the convenience represented by canned beverages — they're easy to use, easy to store, cannot break or chip, they take less space in the refrigerator, chill more quickly, and are safe for the children to handle.

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Remember, the idea of canned soft drinks is new to many of your customers. Give these beverages more — and better — display space. Feature them prominently in your ads and point-of-sale material. If bottles and cans are given proportional place in the market, cans will bring plus sales.

SAMPLES AID

SALES. To introduce canned soft drinks, the Foodland Market in Seattle, Washington, arranged for a demonstrator from a local bottler to pass out free samples. The drinks were served cold from an ice bin set up for just this purpose. Notice, too, that a mass display of canned beverages was set up near the demonstrator, so that shoppers would be tempted to buy on the spot.



PLEASE ALL TASTES.

Variety is the keynote of this 42-case canned soft drink display being restocked by Clerk John Droll at the Thriftymart Market, Eagle Rock, California. Featured are such flavor favorites as Black Cherry, Orange, Lemon-Lime, Ginger Ale, Root Beer and Cola. There's enough variety here to make it easy for Mrs. Housewife to satisfy the tastes of all members of her family. Cans are priced in units of six to encourage multiple purchases.





TEMPTING TIE-INS. Customers are lured into stocking up for outdoor eating and fun by this eye-catching display in the Sentry Store at Thiensville, Wisconsin. Next to the canned beer and potato chips is a display of equipment for cooking and grilling. It's a good idea to make canned beer an integral part of any picnic display you set up.

SELL THE CHILDREN.

At Kory's Market in Highland Park, California, a special packer's promotion helps sell canned soft drinks. Youngsters are attracted by the free premium and, once they're sold, Mom hasn't got a chance. No matter how you do it—with free samples, special prices or just more and bigger displays—it will pay you to get the kids behind the swing to canned soft drinks.



PROMOTION POINTERS

This young lady points the way to extra profits for retailers who push canned sauerkraut this summer! To take advantage of the 24% retail profit margin on kraut, tie-in with the "Kraut Salad Season" promotion sponsored by the National Kraut Packers Association. New and appetizing recipes are being presented to your customers through a national publicity program. Set up combination displays of kraut and dressings in your produce section or load up a shopping cart with kraut and tie it in with your cold cut department for a mobile jumble display.

This year's "National Canned Salmon Week" will be promoted from August 23-30 and will coincide with the arrival of new packs of canned salmon from Alaska, Columbia River and Puget Sound canneries. "Summer Salad Specials" is the theme of the 1957 campaign. Food editors of newspapers, television and radio have been alerted to the promotion with timely canned salmon recipe material.



A free page color mat is available to retailers to use for a regular advertising page. "Summer Salad Specials" is the banner headline of the mat which also features an appetizing building canned salmon salad plate in full color. Herald A. O'Neill (left), executive secretary, Association of Pacific Fisheries, Inc., and L. A. Petersen, chairman of the salmon industry committee for "National Canned Salmon Week," are shown as they review the layout of the full-color advertising page. For a copy of the mat, write to Association of Pacific Fisheries, 200 Colman Building, Seattle 4, Washington.

REMINDER

You still have a few weeks to plan your display, advertising and merchandising tie-ins with one of the biggest store-wide food promotions to hit the grocery trade. The campaign, starting September 12th and continuing through the 21st, is a joint promotional effort of the National Association of Retail Grocers and "Saturday Evening Post" magazine. Theme of this promotion is



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Participating stores will receive an array of point-of-sale materials to help them fully utilize the impact of the promotion. For details, write to Carl Caldas, Food Merchandising Manager, The Saturday Evening Post, Independence Square, Philadelphia 5, Pennsylvania.

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ISSUE!

Soft Drink

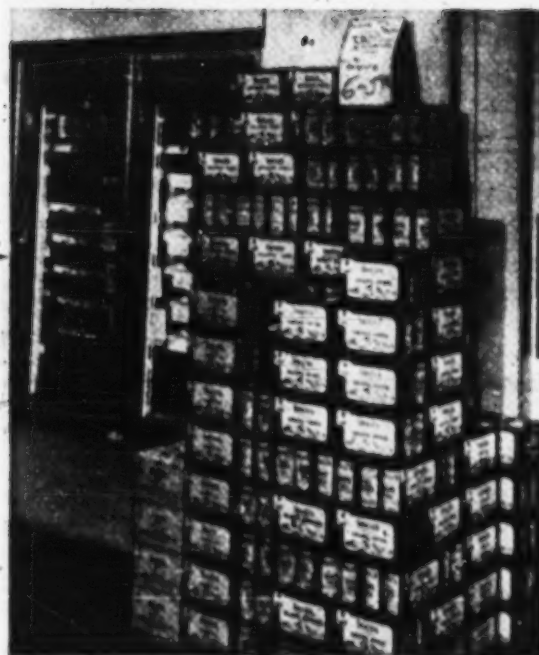
CANNED

Return Postage Guaranteed

PUBLISHED BY CONTINENTAL CAN COMPANY, 100 E. 42ND ST., NEW YORK 17, N. Y.

Merchandise Digest

CANNED FOODS



STOCK UP. This display of canned soft drinks at Art's Food Center in Seattle, Washington, is located next to the refrigerated cases. Shoppers, picking up a cold beverage for immediate use, are encouraged to stock up on extra cans. They are so arranged that each of the different flavors can be easily reached. A homemade sign lists the advantages of soft drinks in cans.

MOVES WITH TRAFFIC. At the Grand Central Market, San Francisco, California, they figure that the more shoppers are exposed to canned soft drinks, the quicker they'll try them. By using dump displays in movable wire baskets, they can be moved quickly to where traffic is heaviest. You can use similar baskets and set them up in your picnic department, cold-cuts section, regular meat department or at the check-out to encourage last-minute purchases.



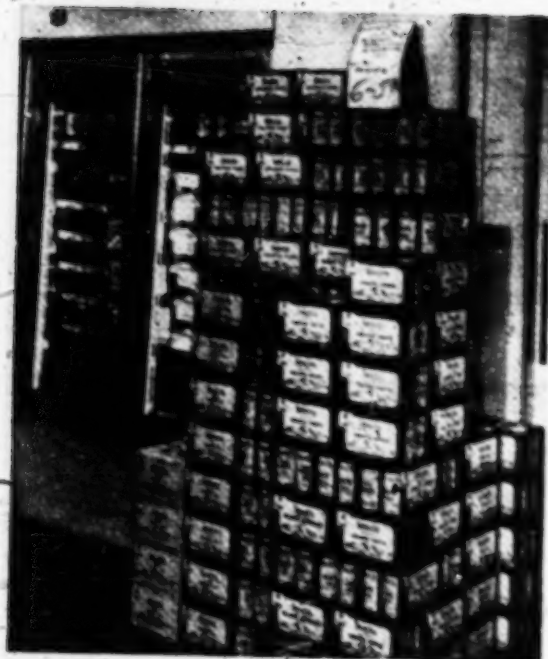
KEEP YOUR EYE

ON THE THERMOMETER. There's still lots of hot weather ahead, so keep your eye on the thermometer and be ready with plenty of "keep cool" promotions. Include in your displays soft drinks and juices—canned items that lend themselves to summertime merchandising. In your advertising, handbills or store banners, you might invite shoppers to come in and cool off with a free sample of canned soft drinks.



Merchandise Digest

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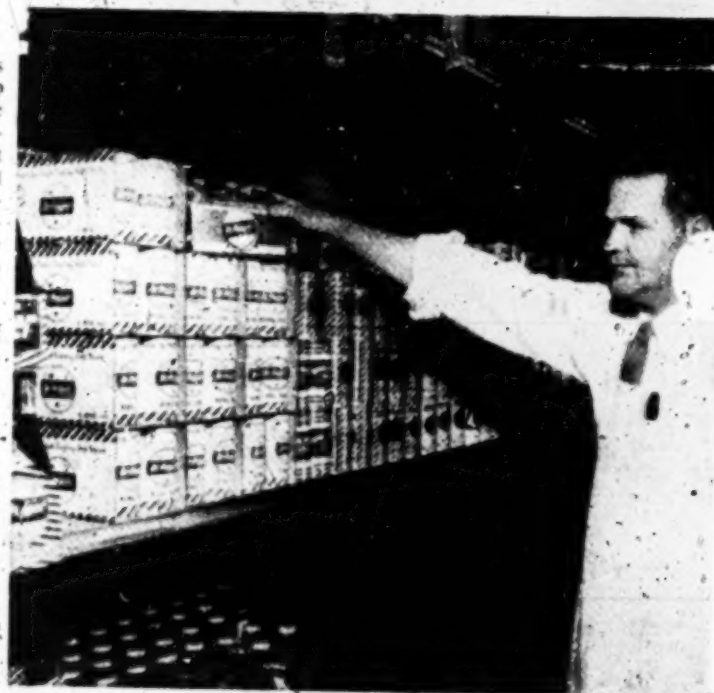
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TOP BILLING.

An unusually hot summer in Texas finds Frank Wolfe of Minyard's Store #6 in Dallas, doing a rushing business on canned soft drinks. To make sure customers find the beverages easily, he keeps them prominently displayed at eye-level in his regular soft drink section.

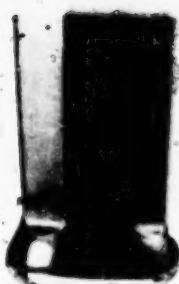




KOSHER DILL PICKLES



*SWEET PICKLE STRIPS



CHILI SAUCE



NAIL POLISH



OLIVES



APPLE BUTTER



175



CHEMICALS



FOOD SEASONING



STRAWBERRY PRESERVES



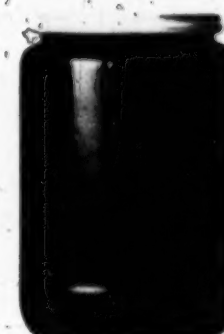
SHAMPOO



WINE



COCKTAIL ONIONS



BAKED BEANS



WAFFLE SYRUP



MARASCHINO CHERRIES



COLD CREAM



*BLACKBERRY JELLY



glamour

HAZEL-A

division of **CONTI**

Foods-in-glass NEWS

*a memo to Home
Economists*

FROM W. L. CAP COMPANY • CHICAGO
A Subsidiary of Continental Can Company, Inc.

Vol. II, No. 4

June 1957

WHAT A YEAR THIS HAS BEEN!

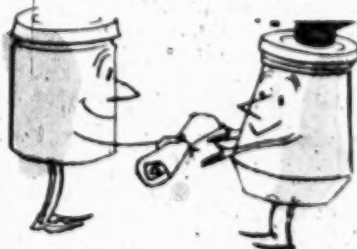
Busy, busy, busy...that's what we've been, but we love it! We've particularly enjoyed telling all of our home economist friends about the new twist-off cap, which has been such a sensation since its introduction to the food industry. Most of you who receive this newsletter regularly are familiar with our two pets, Mr. Twist-Off and Mr. Pry-Off. We know, though, that you've been busy, too, and may have forgotten some of the facts we've been sending to you. So, with your permission, we'd like to repeat a few facts, for your information, covered in previous newsletters

...

COMMENCEMENT EXERCISES...

This has been the time for them and we thought we'd commence by telling you that Mr. Twist-Off Cap, a real infant prodigy, has been tops in his class and rates right up there in popularity with his older brother, Mr. Pry-Off Cap, as a seal for glass containers.

Just in case we missed giving you all the facts on these two favorites, we gave ourselves a sort of "final examination" and we thought you might like to see it. Perhaps it will come in handy as reference material or even as a quiz for a class next fall.





POLISH



OLIVES



APPLE BUTTER



IMPULSE!

sparks point-of-purchase buying!



IMPROVEMENT!

brings you the newest in glass!



SHAMPOO



WINE



COCKTAIL ONIONS



BAKED BEANS

Whether you pack food or beverage, your product will benefit from the efforts of the three Hazel-Atlas "Imps"! It will get more sales *imp*act, and produce more *imp*ulse sales in the beautiful H-A containers. 1. New H-A wine bottles are *crystal-ribbed* at shoulder and base to capture light and color... make wine come alive on the shelf. 2. New H-A Permalabel cosmetic bottles and jars made in beautiful flint, amber, blue and opal white glass. New H-A Permalabel cosmetic items have brilliant colors permanently fired into the glass.

For distilled spirits, Hazel-Atlas also offers a full line of standard packages... lightweight, glamour-in-glass bottles of crystal-clear flint and beautiful amber, available in every popular style and size.

For your peanut butter, cheese, and spreads there is a complete H-A line of beautiful decorated and plain re-use tumblers as well as other items for table use. Sparkling flint jars for baby foods, preserves, relish, olives and pickles, honey, vegetables and fruit. Beautiful, crystal-clear bottles for salad dressings, mayonnaise and catsup. Rigid quality-controls keep your H-A containers uniform in size, shape, clarity and color. They perform efficiently on the filling line and display your product at its best. You are sure of fast, dependable delivery during sales peaks and emergencies, served by H-A's nationwide network of glass plants and warehouses. Ask your H-A representative or call your nearest H-A office, today.



...glamour in glass!

HAZEL-ATLAS GLASS

division of **CONTINENTAL © CAN COMPANY**

WHEELING, WEST VIRGINIA



BLACKBERRY JELLY

HERE'S THE CAP TEST...

Q. What is vapor-vacuum sealing?

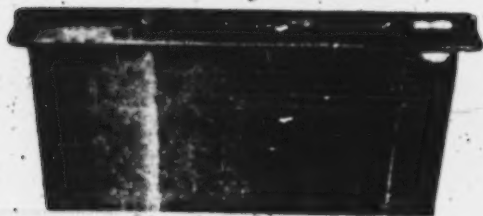
A. A method for sealing glass containers for food to protect the contents from air. During the capping process, air is forced out of the jar or bottle with dry steam. After sealing, the steam condenses, creating a vacuum in the top of the container. The gasket in the cap prevents air from leaking in.

Q. Why is it necessary to protect food from contact with the air?

A. Because of its oxidizing effect, air is the great destroyer of freshness and color in food. Also, many molds which have a contaminating effect upon food are airborne.

Q. What is the pry-off cap?

A. A pry-off cap is a machine-applied metal lid. A flexible gasket on the inside of the lid forced against the side of the container forms an airtight seal, preventing leakage of air. This provides lasting protection for the food.



Q. What is a twist-off cap?

A. The new twist-off cap has a gasket in the top which provides the airtight seal. Lugs on the inside of the cap fit snugly under lugs on the neck or outer rim of the glass container. A quarter-turn of the cap brings the top of the jar or bottle tight against the flexible gasket to create a seal.

Q. Are pry-off and twist-off caps easy to open?

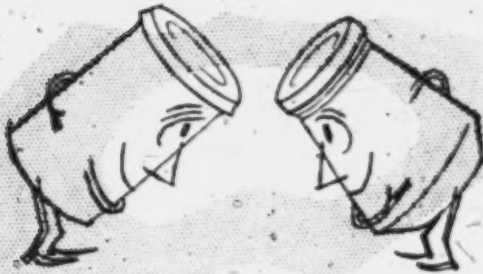
A. Either can be removed easily. A flick of the wrist with a lid flipper, a handy metal key designed for the purpose, will open the pry-off. The twist-off is removed by hand with a quarter turn of the cap.

Q. Can the cap be used to reseal containers?

A. If the contents are not consumed at one sitting, the original cap can be used to reseal the container, airtight. Pressing down on the pry-off with the heels of the hands until a click is heard restores the airtight seal. A twist of the twist-off cap puts it snugly in place protecting the contents from air. For most food products, refrigeration of the unused contents is necessary, as well.

Q. Can each cap be used on all foods packed in glass?

A. Generally speaking, no. Each has its own job to do. The pry-off is recommended for foods which undergo high retorting temperatures (240 degrees or more), including many vegetables, baby food, and various meat products. The twist-off is ideal for products packed at sterile temperatures, cold-filled products, or foods that are pasteurized by open-water bath. Products packed by these various methods include pickles, catsup, vinegar, cherries, syrup, and others. Some



foods, such as jams, jellies, preserves, and peanut butter, use both -- the pry-off if packed in tumblers -- the twist-off if packed in jars. Many packers of sterile fruit juices use the pry-off on pints, quarts, and gallons, but prefer the twist-off for decanter-style packages.

Q. Why is glass an ideal container for food?

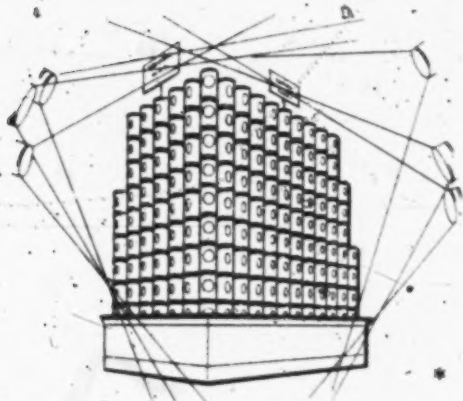
A. An inert, non-toxic material, glass can not affect the taste, aroma, color, purity, or chemical structure of food. Protected from air, food will keep indefinitely in glass. Glass also affords an opportunity to see the color, consistency, and shape of the products.

Canned Foods Newsletter for Brokers—May 1958

"We at National like canned foods because no other commodity group produces as much dollar income in our stores, and none produces as much gross profit. They account for about one-sixth of our total volume and earn a percentage profit higher than our average.

"Canned foods have built-in advantages which cannot be matched by any other method of processing: finest quality, unequalled flavor, nutritious, convenient, economical, time and work saving, ready for instant use, little or no waste, clean and wholesome, wide variety, easy to buy, store and use, available in all seasons."

Val S. Bauman, Vice President
National Tea Company



Canned foods benefit most from special promotions — unit sales of canned vegetables went from 4,038 in regular sales to 34,539 in one week from special display. Canned fruits jumped from 3,008 to 24,475.

Super Valu Study

CANNED FOOD FACTS

from the
National Canners Association

Each week some 50 million shoppers purchase about 400 million containers of canned foods in grocery stores and other market outlets in cities, towns and communities of all sizes throughout the United States. About \$85 million is spent each week by U. S. consumers for canned foods, of which there are more than 500 different types and styles available.



Another attribute of canned foods that is important to the consumer is their relatively stable price. The U. S. Bureau of Labor Statistics consumer price index reveals that canned foods have been consistently in the "best buy" group of all food products.

Canned foods have been in the forefront of many of the new developments in the food marketing operation. Canned foods were the first of the so-called "pre-packaged" foods and the first of the "convenience" foods. As such, they have been the backbone of most retail store operations. Canned foods account for 15 to 20 percent of the total sales in many grocery stores.



Week after week and year after year the homemaker goes to the store knowing that there she will find a complete assortment of canned foods of unquestioned purity, wholesomeness and palatability. Each year, some new kinds of canned foods are added to the list, so that at all times she has a wide assortment of fruits, vegetables, fish, meats, poultry, soups, juices and specialties. The greater variety of canned entrees, salads, desserts, and foods for special purposes, such as the dietetic, infant, junior age and senior foods, provide all members of the family a pleasing variety with a minimum of time and work expended.

Production of canned foods has increased 20-fold in the last 50 years, a gain that few American industries can match and an indisputable indication of consumer acceptance of this form of food. The annual production of the canning industry now amounts to more than 22 billion pounds, representing about 8-1/2% of the nation's food supply. This is packed in 700 million cases containing more than 22 billion tin and glass containers.

ALTHOUGH THE MODERN GROCERY STOCKS ANYWHERE FROM 3,000 to 8,000 ITEMS, ALERT RETAILERS KNOW THAT THE BACKBONE OF THEIR SALES IS STILL THE CANNED FOODS DEPARTMENT WHICH YIELDS A HIGHER NET PROFIT THAN ALMOST ANY OTHER CLASS OF MERCHANDISE.

MARCH 4, 1957—Canner & Freezer, Canning Trade;
 MARCH—Food Engineering;
 APRIL—Food Packer, Western Canner & Packer.

New Hazel-Atlas research in glass puts three "Imps" to work for you . . .



Whether you pack food or beverage—three Hazel-Atlas "Imps" will produce more sales impact, and more impulse sales in beautiful new H-A containers like these.

Your foods' appetizing color and shape are salesmen with silver tongues, when you let them speak for themselves in a beautiful H-A container. For peanut-butter and cheese spreads—a complete H-A line of brilliantly decorated and plain re-use tumblers. Sparkling flint jars for baby foods, relish, olives and pickles, honey, vegetables and fruit.

Rigid quality-controls keep your H-A containers uniform in size, shape, clarity and color. They perform efficiently on the filling line and display your product at its best. You are sure of fast, dependable delivery during sales peaks and emergencies, served by H-A's nationwide network of glass plants and warehouses. Ask your H-A representative or call your nearest H-A office, today.



...glamour in glass!

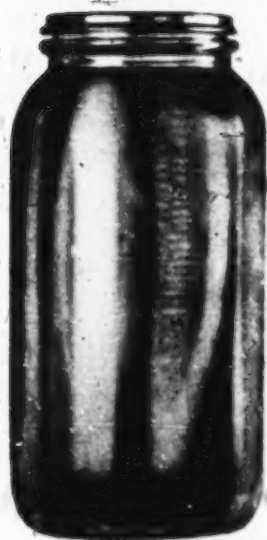
HAZEL-ATLAS GLASS

division of **CONTINENTAL CAN COMPANY**

WHEELING, WEST VIRGINIA

FEBRUARY 1957—Modern Packaging; Glass Packer; MARCH—Packaging Parade; Good Packaging.

New Hazel-Atlas research in glass puts three "Imps"



KOSHER DILL PICKLES



SWEET PICKLE STRIPS



CHILI SAUCE



NAIL POLISH



OLIVES



APPLE BUTTER



CHEMICALS



FOOD SEASONING



STRAWBERRY PRESERVES



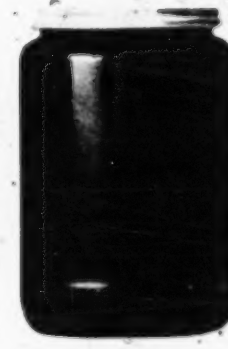
SHAMPOO



WINE



COCKTAIL ONIONS



BAKED BEANS

Change in glass puts three "Imps" to work for you...



NAIL POLISH



OLIVES



APPLE BUTTER



SHAMPOO



WINE



COCKTAIL ONIONS



BAKED BEANS



IMPACT! adds sales punch!



IMPULSE! sparks point-of-purchase buying!



IMPROVEMENT! brings you the newest in glass!

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PROOFS of Your Advertisement in the *1955* Issue

PLEASE OKAY ONE PROOF
AND RETURN IMMEDIATELY
TO

American Brewer

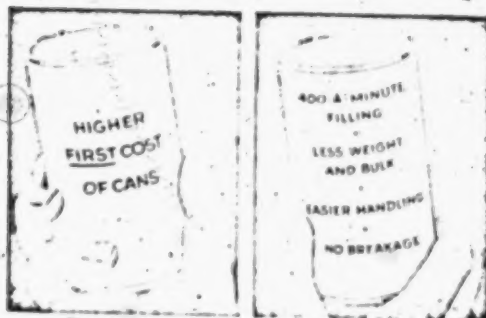
397 EAST 64th ST.
NEW YORK 17
NEW YORK

Advertisement will be inserted as shown unless corrections are received by **MAY 25 1955**

American Brewer Directory

What leading brewers know about canned beer

Some of the most successful national brewers now pack almost half their beer in cans. Alert regional brewers are also stepping up their canned beer output. Modern cost accounting reveals the true economy of cans in both large and local operations. Cans cost far less to fill, deliver and handle than less convenient containers. They take less space. There's no breakage, and no need for expensive packing cases. Sell more of your beer the way modern people like it—in Continental cans.



First cost isn't all. Look at both sides of the packaging picture to appreciate the economy of cans.

CONTINENTAL CAN COMPANY



Eastern Division: 100 E. 42nd St., New York 17
Central Division: 735 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4

FILE: LETTERS TO EXECUTIVES
MERCH. BOOK
J. P. #2623
Release #1113

To Sales List A-2

August 31, 1955

**PUBLICITY
THAT MAKES
CONTINENTAL
STAND
OUT!**

DESIGN 'POP' BOTTLE CAN

NEW YORK, July 7.—(AP)—Continental Can Co. announced plans Thursday for production of a streamlined soft drink can that's shaped like a "pop" bottle.

The slender can is approximately the same diameter as a conventional six or seven-ounce soft drink bottle of glass and just about as tall, but it holds more (nine ounces).

The company says it can be used in most automatic vending machines and can be merchandised in the same six-pack carrier now used for returnable bottles.

Milwaukee, Wis.
SENTINEL

Indianapolis, Ind.
NEWS - 7/7/55

'POP' BOTTLE SHAPED CANS ARE PLANNED

NEW YORK (AP)—Continental Can Co. announced plans today for production of a streamlined soft drink can that's shaped like a "pop" bottle.

The slender can is approximately the same diameter as the conventional six or seven-ounce soft drink bottle and just about as tall, but holds nine ounces. The company says it can be used in most automatic vending machines and can be merchandised in the same six-pack carrier now used for returnable bottles.

Continental To Make New Soft Drink Can

NEW YORK, July 7.—Continental Can Company will start production in July of a new, nine-ounce, cap sealed soft drink can. The nearest thing to a bottle, this slender can is approximately the same diameter as a standard six-ounce or seven-ounce soft drink bottle and closely approximates it in height.

Because of its dimensions, the new can may be run through present bottling equipment with minimum modifications and can be used in most automatic vending machines without any major adjustments to the machine. It also can be merchandised in the same six-pack carrier now used for returnable bottles.

New York, N.Y.
AMERICAN METAL MARKET

New Pop Can Slated

Continental Can Co. will start production this month of a new 9-ounce cap-sealed soft drink can. The can is approximately the same diameter as a standard 6-ounce soft drink bottle and closely approximates it in height.

Los Angeles, Cal.
TRIBUNE - 7/11/55

Now It's Bottled Cans

NEW YORK (AP)—Continental Can Co. announced plans for production of a streamlined soft drink can that's shaped like a "pop" bottle. The can is approximately the same diameter as the conventional six or seven-ounce soft drink bottle of glass and just about as tall, but it holds more (nine ounces).

Cleveland, Ohio
NEWS - 7/8/55

Cans Taking Shape As 'Pop' Bottles

NEW YORK, July 8.—Continental Can Co. announced plans for production of a streamlined soft drink can that's shaped like a "pop" bottle.

The slender can is approximately the same diameter as the conventional six or seven-ounce soft drink bottle of glass and just about as tall, but it holds more (nine ounces). The company says it can be used in most automatic vending machines and can be merchandised in the same six-pack carrier now used for returnable bottles.

Toledo, Ohio
BLADE

Cleanings

Continental Can Co. is introducing a nine-ounce soft drink can that fits many automatic vending machines.

New York, N.Y.
HERALD TRIBUNE
7/8/55

New Soft Drink Can

Continental Can Co. is bringing out this month a new 9-ounce cap sealed soft drink can, of approximately the same diameter as 6-ounce and 7-ounce bottles and about the same height. The correspondence means that it can be run through standard bottling equipment with slight modification and handled in most automatic vending machines without requiring major adjustment. Syracuse Plant No. 1 is not presently scheduled to produce the item but may on market demand.

Syracuse, N.Y.
HERALD-JOURNAL
7/8/55

Latest Can for Soft Drinks

By a WALL STREET JOURNAL Staff Reporter

NEW YORK—Continental Can Co. will start producing soon a nine-ounce soft drink can it says is "the nearest thing to a bottle."

The can reportedly is about the same diameter as a standard six-ounce or seven-ounce soft drink bottle, and is just about as tall.

The company says it can be used in most automatic vending machines, and can be merchandised in the same kind of six-pack carrier now used for returnable bottles.

New York, N.Y.
MORNING WALL ST. JRN.
7/8/55

Continental Can Plans New Can

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The slender can is approximately the same diameter as the conventional six or seven-ounce soft drink bottle of glass and just about as tall, but it holds more (nine ounces). The company says it can be used in most automatic vending machines and can be merchandised in the same six-pack carrier now used for returnable bottles.

Baltimore, Md.
NEWS-POST

2819 Continental Lists Plans For New Soft Drink Can

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New Haven, Conn.
REGISTER - 7/10/55

Soft Drink Can Is Streamlined

NEW YORK, July 7 (AP)—Continental Can Co. announced plans today for production of a streamlined soft drink can that's shaped like a "pop" bottle. The slender can is approximately the same diameter as the conventional six or seven-ounce soft drink glass bottle, but it holds more (nine ounces). The company says it can be used in most automatic vending machines.

Chicago, Ill.
HERALD-AMERICAN

Continental Can Co. will start production this month of a new nine-ounce cap-sealed soft



drink can. The slender can is the same diameter as a standard six or seven-ounce soft drink bottle and approximates it in height.

Pittsburgh, Pa.
PRESS - 7/10/55

New Soft Drink Can

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Detroit, Mich.
TIMES